



TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
SN: 09/679,664 ATTY #: (072827-1801)

ClustalW Formatted Alignments

SEQ ID 1 M A F Y S C C W V L L A L T W H T S A Y G P D Q R  
SEQ ID 2 M L L L L L A P L F L R P P G A G G A Q T P N A  
SEQ ID 3 M G P G A P F A R V G W P L P L L V V M A A G V A  
SEQ ID 4 M A S P R S S G Q P G P X P P P P P P P A R L L  
SEQ ID 5 M V C E G K R S A S C P C F F L L T A K F Y W I L

SEQ ID 1 A Q K K G D I I L G G L F P I H F G V A A K D Q D  
SEQ ID 2 T S E G C Q I I H P P W E G G I R Y R G L T R D Q  
SEQ ID 3 P V W A S H S P H L P R P H S R V P P H P S S E R  
SEQ ID 4 L L L L P L L P L A P G A W G W A R G A P R P P  
SEQ ID 5 T M M Q R T H S Q E Y A H S I R V D G D I I L G G

SEQ ID 1 L K S R P E S V E C I R Y N F R G F R W L Q A M I  
SEQ ID 2 V K A I N F L P V D Y E I E Y V C R G E R E V V G  
SEQ ID 3 R A V Y I G A L F P M S G G W P G G Q A C Q P A V  
SEQ ID 4 P S S P P L S I M G L M P L T K E V A K G S I G R  
SEQ ID 5 L F P V H A K G E R G V P C G E L K K E K G I H R

SEQ ID 1 F A I E E I N S S P A L L P N L T L G Y R I F D T  
SEQ ID 2 P K V R K C L A N G S W T D M D T P S R C V R I C  
SEQ ID 3 E M A L E D V N S R R D I L P D Y E L K L I H H D  
SEQ ID 4 G V L P A V E L A I E Q I R N E S L L R P Y F L D  
SEQ ID 5 L E A M L Y A I D Q I N K D P D L L S N I T L G V

SEQ ID 1 C N T V S K A L E A T L S F V A Q N K I D S L N L  
SEQ ID 2 S K S Y L T L E N G K V F L T G G D L P A L D G A  
SEQ ID 3 S K C D P G Q A T K Y L Y E L L Y N D P I K I I L  
SEQ ID 4 L R L Y D T E C D N A K G L K A F Y D A I K Y G P  
SEQ ID 5 R I L D T C S R D T Y A L E Q S L T F V Q A L I E

SEQ ID 1 D E F C N C S E H I P S T I A V V G A T G S G V S  
SEQ ID 2 R V D F R C D P D F H L V G S S R S I C S Q G Q W  
SEQ ID 3 M P G C S S V S T L V A E A A R M W N L I V L S Y  
SEQ ID 4 N H L M V F G G V C P S V T S I I A E S L Q G W N  
SEQ ID 5 K D A S D V K C A N G D P P I F T K P D K I S G V

SEQ ID 1 T A V A N L L G L F Y I P Q V S Y A S S S R L L S  
SEQ ID 2 S T P K P H C Q V N R T P H S E R R A V Y I G A L  
SEQ ID 3 G S S S P A L S N R Q R F P T F F R T H P S A T L  
SEQ ID 4 L V Q L S F A A T T P V L A D K K K Y P Y F F R T  
SEQ ID 5 I G A A A S S V S I M V A N I L R L F K I P Q I S

Figure 1a

*SEQ ID 1* N K N Q F K S F L R T I P N D E H Q A T A M A D I  
*SEQ ID 2* F P M S G G W P G G Q A C Q P A V E M A L E D V N  
*SEQ ID 3* H N P T R V K L F E K W G W K K I A T I Q Q T T E  
*SEQ ID 4* V P S D N A V N P A I L K L L K H Y Q W K R V G T  
*SEQ ID 5* Y A S T A P E L S D N T R Y D F F S R V V P P D S

*SEQ ID 1* I E Y F R W N W V G T I A A D D D Y G R P G I E K  
*SEQ ID 2* S R R D I L P D Y E L K L I H H D S K C D P G Q A  
*SEQ ID 3* V F T S T L D D L E E R V K E A G I E I T F R Q S  
*SEQ ID 4* L T Q D V Q R F S E V R N D L T G V L Y G E D I E  
*SEQ ID 5* Y Q A Q A M V D I V T A L G W N Y V S T L A S E G

*SEQ ID 1* F R E E A E E R D I C I D F S E L I S Q Y S D E E  
*SEQ ID 2* T K Y L Y E L L Y N D P I K I I I L M P G C S S V S  
*SEQ ID 3* F F S D P A V P V K N L K R Q D A R I I I V G L F Y  
*SEQ ID 4* I S D T E S F S N D P C T S V K K L K G N D V R I  
*SEQ ID 5* N Y G E S G V E A F T Q I S R E I G G V C I A Q S

*SEQ ID 1* E I Q H V V E V I Q N S T A K V I V V F S S G P D  
*SEQ ID 2* T L V A E A A R M W N L I V L S Y G S S S P A L S  
*SEQ ID 3* E T E A R K V F C E V Y K E R L F G K K Y V W F L  
*SEQ ID 4* I L G Q F D Q N M A A K V F C C A Y E E N M Y G S  
*SEQ ID 5* Q K I P R E P R P G E F E K I I K R L L E T P N A

*SEQ ID 1* L E P L I K E I V R R N I T G K I W L A S E A W A  
*SEQ ID 2* N R Q R F P T F F R T H P S A T L H N P T R V K L  
*SEQ ID 3* I G W Y A D N W F K I Y D P S I N C T V D E M T E  
*SEQ ID 4* K Y Q W I I P G W Y E P S W W E Q V H T E A N S S  
*SEQ ID 5* R A V I M F A N E D D I R R I L E A A K K L N Q S

*SEQ ID 1* S S S L I A M P Q Y F H V V G G T I G F A L K A G  
*SEQ ID 2* F E K W G W K K I A T I Q Q T T E V F T S T L D D  
*SEQ ID 3* A V E G H I T T E I V M L N P A N T R S I S N M T  
*SEQ ID 4* R C L R K N L L A A M E G Y I G V D F E P L S S K  
*SEQ ID 5* G H F L W I G S D S W G S K I A P V Y Q Q E E I A

*SEQ ID 1* Q I P G F R E F L K K V H P R K S V H N G F A K E  
*SEQ ID 2* L E E R V K E A G I E I T F R Q S F F S D P A V P  
*SEQ ID 3* S Q E F V E K L T K R L K R H P E E T G G F Q E A  
*SEQ ID 4* Q I K T I S G K T P Q Q Y E R E Y N N K R S G V G  
*SEQ ID 5* E G A V T I L P K R A S I D G F D R Y F R S R T L

Figure 1b

*SEQ ID 1* F W E E T F N C H L Q E G A K G P L P . V D T F L R  
*SEQ ID 2* V K N L K R Q D A R I I V G L F Y E T E A R K V F  
*SEQ ID 3* P L A Y D A I W A L A L A L N K T S G G G G R S G  
*SEQ ID 4* P S K F H G Y A Y D G I W V I A K T L Q R A M E T  
*SEQ ID 5* A N N R R N V W F A E F W E E N F G C K L G S H , G

*SEQ ID 1* G H E E S G D R F S N S S T A F R P L C T G D E N  
*SEQ ID 2* C E V Y K E R L F G K K Y V W F L I G W Y A D N W  
*SEQ ID 3* V R L E D F N Y N N Q T I T D Q I Y R A M N S S S  
*SEQ ID 4* L H A S S R H Q R I Q D F N Y T D H T L G R I I L  
*SEQ ID 5* K R N S H I K K C T G L E R I A R D S S Y E Q E G

*SEQ ID 1* I S S V E T P Y I D Y T H L R I S Y N V Y L A V Y  
*SEQ ID 2* F K I Y D P S I N C T V D E M T E A V E G H I T T  
*SEQ ID 3* F E G V S G H V V F D A S G S R M A W T L I E Q L  
*SEQ ID 4* N A M N E T N F F G V T G Q V V F R N G E R M G T  
*SEQ ID 5* K V Q F V I D A V Y S M A Y A L H N M H K D L C P

*SEQ ID 1* S I A H A L Q D I Y T C L P G R G L F T N G S C A  
*SEQ ID 2* E I V M L N P A N T R S I S N M T S Q E F V E K L  
*SEQ ID 3* Q G G S Y K K I G Y Y D S T K D D L S W S K T D K  
*SEQ ID 4* I K F T Q F Q D S R E V K V G E Y N A V A D T L E  
*SEQ ID 5* G Y I G L C P R M S T I D G K E L L G Y I R A V N

*SEQ ID 1* D I K K V E A W Q V L K H L R H L N F T N N M G E  
*SEQ ID 2* T K R L K R H P E E T G G F Q E A P L A Y D A I W  
*SEQ ID 3* W I G G S P P A D Q T L V I K T F R F L S Q K  
*SEQ ID 4* I I N D T I R F Q G S E P P K D K T I I L E Q L R  
*SEQ ID 5* F N G S A G T P V T F N E N G D A P G R Y D I F Q

*SEQ ID 1* Q V T F D E C G D L V G N Y S I I N W H L S P E D  
*SEQ ID 2* A L A L A L N K T S G G G G R S G V R L E D F N Y  
*SEQ ID 3*  
*SEQ ID 4* K I S L P  
*SEQ ID 5* Y Q I T N K S T E Y K V I G H W T N Q L H L K V E

*SEQ ID 1* G S I V F K E V G Y Y N V Y A K K G E R L F I N E  
*SEQ ID 2* N N Q T I T D Q I Y R A M N S S S F E G V S G H V  
*SEQ ID 3*  
*SEQ ID 4*  
*SEQ ID 5* D M Q W A H R E H T H P A S V C S L P C K P G E R

Figure 1c

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SEQ ID 1 E K I L W S G F S R E V P F S N C S R D C L A G T  
SEQ ID 2 V F D A S G S R M A W T L I E Q L Q G G S Y K K I  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 K K T V K G V P C C W H C E R C E G Y N Y Q V D E

SEQ ID 1 R K G I I E G E P T C C F E C V E C P D G E Y S D  
SEQ ID 2 G Y Y D S T K D D L S W S K T D K W I G G S P P A  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 L S C E L C P L D Q R P N M N R T G C Q L I P I I

SEQ ID 1 E T D A S A C N K C P D D F W S N E N H T S C I A  
SEQ ID 2 D Q T L V I K T F R F L S Q K  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5 K L E W H S P W

SEQ ID 1 K E I E F L S W T E P F  
SEQ ID 2  
SEQ ID 3  
SEQ ID 4  
SEQ ID 5

Figure 1d

SEQID6 GIALTLFAVLGIPLTAFVLGVFIKFRTNTP  
SEQID7 LFISVSVLSSLGIVLAVVCLSFNIYNSHVR  
SEQID8 LFISVSVLSSLGIVLAVVCLSFNIYNSHVR  
SEQID9 LYSILSALTILGMIMASAFLLFFNIKNRNQK  
SEQID10 AVVVPVFVAILGIIATTFVIVTFVRYNOTP  
  
SEQID6 VKATNREL SYLLLFSLLCCFSSSLFFIGEP  
SEQID7 YI QNSOPN LNNL TAVGCSLALA AVFPLGLO  
SEQID8 YI QNSOPN LNNL TAVGCSLALA AVFPLGLO  
SEQID9 LIKMSSP YMNNL IILGGMLS YASIFLFGLO  
SEQID10 V RASGRELS YVLLTGIFLCYSITFLMIAAP  
  
SEQID6 QOWTCRLROPAFGISFVL CISCILVKTNRV  
SEQID7 GYHIGRNQFPFVCOARLWLLGLGFSLGYGS  
SEQID8 GYHIGRNQFPFVCOARLWLLGLGFSLGYGS  
SEQID9 GS FVSEKTFETLCTV R T W I L T V G Y T T A F G A  
SEQID10 OTI ICSFRRVFLGLGMCFSYAALLTKTNRI  
  
SEQID6 LLVFEAKIPTSFHAKWWGLNLQFLLVFLCT  
SEQID7 MFTKIWWVHTVFTKKEEKKEWRKTLEPWKL  
SEQID8 MFTKIWWVHTVFTKKEEKKEWRKTLEPWKL  
SEQID9 MFAKTWRVHAI FKNV KM KKK I I K OOKLLVI  
SEQID10 H R I F E O G K K S V T A P K F I S P A S Q L V I T F S L I  
  
SEQID6 FMOIVICV I WLYTAPPSSYR N Q E L E O E I I F  
SEQID7 YATVGLL VGM O V L T L A I W Q I V O P L H A T I E T  
SEQID8 YATVGLL VGM O V L T L A I W O I V O P L H A T I E T  
SEQID9 VGGM L L I D L C I L I C W Q A V O P L R A T V E K Y S M  
SEQID10 S V O L L G V F V W F V V O P P H I I I O Y G E O R T L O P  
  
SEQID6 ITCHEGSLMALGFLIGYTCLLAACFFFAF  
SEQID7 FAKKEEPKEOIOVSILP OLEHCSSRKMNTWL  
SEQID8 FAKKEEPKEOIOVSILP OLEHCSSRKMNTWL  
SEQID9 EPOPAGARDISIRPLLEHCENTHMTIWLGIV  
SEQID10 EKARGV LKCOISOLSLICSLGYSILLMVTC  
  
SEQID6 K S A K L P E N F N E A K F I T F S M L I F F I V W I S F I  
SEQID7 G I F Y G Y K G L L L L L G I F L A Y E T K S V S T E K I N  
SEQID8 G I F Y G Y K G L L L L L G I F L A Y E T K S V S T E K I N  
SEQID9 Y A Y K G L L M L F G C F L A W E T R N V S I P A L N O S K  
SEQID10 T V Y A I K T R G V P E T F N E A K P I G F T M Y T T C I I

Figure 2a

SEQ ID 6 P A Y A S T Y G K F V S A V E V I A I L A A S F G L L A C I  
SEQ ID 7 D H R A V G M A I Y N V A V L C L I T A P V T M I L S S Q Q  
SEQ ID 8 D H R A V G M A I Y N V A V L C L I T A P V T M I L S S Q Q  
SEQ ID 9 Y I G M S V Y N V G I M C I I G A A V S F L T R D Q P N V Q  
SEQ ID 10 W L A F I P I F F G T A Q S A E K M Y I Q T T T L T V S M S

SEQ ID 6 F F N K I Y I I L F  
SEQ ID 7 D A A F A F A S L A I V F S S Y I T L V V L F V P K M  
SEQ ID 8 D A A F A F A S L A I V F S S Y I T L V V L F V P K M  
SEQ ID 9 F C I V A L V I I F C S T I T L C L V F V P K L  
SEQ ID 10 L S A S V S L G M L Y M P K V Y I I I F

Figure 2b

SEQ ID 11 K P S R N T I E E V R C S T A A H A F K V A A R A T L R R S  
SEQ ID 12 R R L I T R G E W O S E A Q O D T M K T G S S T N N N E E E K  
SEQ ID 13 R R L I T R G E W O S E A Q O D T M K T G S S T N N N E E E K  
SEQ ID 14 I T L R T N P D A A T O N R A R F O F T Q N Q K K E D S K T S  
SEQ ID 15 H P E Q N V Q K R K A S F K A V V T A A T M Q S K L I Q K G

SEQ ID 11 N V S R K R S S S L G G S T G S T P S S S I S S K S N S E D  
SEQ ID 12 S R L L E K E N R E L E K I I I A E K E E R V S E L R H Q L Q  
SEQ ID 13 S R L L E K E N R E L E K I I I A E K E E R V S E L R H Q L Q  
SEQ ID 14 T S V T S V N O A S T S R L E G L O S E N H R L R M K I T E  
SEQ ID 15 N O R P N G E V K S E L C E S L E T N S K S S V E F P M V K

SEQ ID 11 P F P Q P E R Q K Q Q Q P L A L T Q Q E Q Q Q Q P L T L P Q  
SEQ ID 12 S R Q Q L R S R R H P P T P P P E P S G G L P R G P P E P P D  
SEQ ID 13 S R Q Q L R S R R H P P T P P P E P S G G L P R G P P E P P D  
SEQ ID 14 L O K D L E E V T M Q L Q D T P E K T T Y I K Q N H Y Q E L  
SEQ ID 15 S G S T S

SEQ ID 11 Q Q R S Q Q Q P R C K Q K V I F G S G T V T F S L S F D E P  
SEQ ID 12 R L S C O G S R V H L L Y K  
SEQ ID 13 R L S C O G S R V H L L Y K  
SEQ ID 14 N D I L N L G N F T E S T D G G K A I L K N H L O Q N P Q L  
SEQ ID 15

SEQ ID 11 Q K N A M A H G N S T H O N S L E A Q K S S O T L T R H Q P  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 Q W N T T E P S R T C K O P I E D I N S P E H I Q R R L S L  
SEQ ID 15

SEQ ID 11 L L P L Q C G E T O L O L T V Q E T G L Q G P V G G D Q R P  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 Q E P I L H H A Y L P S I G G V D A S C V S P C V S P T A S  
SEQ ID 15

SEQ ID 11 E V E D P E E L S P A L V V S S S Q S F V I S G G G S T V T  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14 P A H R H V P P S F R V M V S G L  
SEQ ID 15

Figure 3a

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SEQ ID 11 E N V V N S  
SEQ ID 12  
SEQ ID 13  
SEQ ID 14  
SEQ ID 15

Figure 3b

SEQ. ID. NO. 16 M A R S L T W G C C P W C L T E E E K T A A R I D O E I N A  
SEQ. ID. NO. 17 M A R S L T W R C C P W C L T E O E K A A A R V O Q E I N A

SEQ. ID. NO. 16 I L L E Q K K O E R E E L K L L L L G P G E S G K S T F I K  
SEQ. ID. NO. 17 I L L E Q K K Q D R G E L K L L L L G P G E S G K S T F I K

SEQ. ID. NO. 16 Q M R I I H G V G Y S E E Q R R A F R L L I Y O N I F V S M  
SEQ. ID. NO. 17 Q M R I I H G A G Y S E E E R K G F R P L V Y O N I F V S M

SEQ. ID. NO. 16 Q A M I D A M D R L Q I P F S R P O S K Q H A S L V M T Q Q  
SEQ. ID. NO. 17 R A M I E A M E R L Q I P F S R P E S K H H A S L V M S Q Q

SEQ. ID. NO. 16 P Y K V S T F E K P Y A V A M Q Y L W R D A G I R A C Y E R  
SEQ. ID. NO. 17 P Y K V T T F E K R Y A A A M Q W L W R D A G I R A C Y E R

SEQ. ID. NO. 16 R R E F H L L D S A V Y Y L S H L E R I S E Q S Y I P T A Q  
SEQ. ID. NO. 17 R R E F H L L D S A V Y Y L S H L E R I T E E G Y V P T A Q

SEQ. ID. NO. 16 D V L R S R M P T T G I N E Y C F S V K K T K L R I V D V G  
SEQ. ID. NO. 17 D V L R S R M P T T G I N E Y C F S V Q K T N L R I V D V G

SEQ. ID. NO. 16 G Q R S E R R K W I H C F E N V I A L I Y L A S L S E Y D Q  
SEQ. ID. NO. 17 G Q K S E R K K W I H C F E N V I A L I Y L A S L S E Y D Q

SEQ. ID. NO. 16 C L E E N D O E N R M E E S L A L F S T I L E L P W F K S T  
SEQ. ID. NO. 17 C L E E N N Q E N A M K E S L A L F G T I L E L P W F K S T

SEQ. ID. NO. 16 S V I L F L N K T O I L E O K I H T S H L A T Y F P S F Q G  
SEQ. ID. NO. 17 S V I L F L N K T O I L E E K I P T S H L A T Y F P S F Q G

SEQ. ID. NO. 16 P R R D A E A A K S F I L D M Y A R V Y A S C A E P Q O O G G  
SEQ. ID. NO. 17 P K Q D A E A A K R F I L D M Y T R M Y T G C V O G P E G S

SEQ. ID. NO. 16 R K G S R A R R F F A H F T C A T O T O S V A S V F K O V R  
SEQ. ID. NO. 17 K K G A R S R A L F S H Y T C A T O T Q N I R K V F K O V R

Figure 4a

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SEQ. ID. NO. 16 D S V L A R Y L D E I N L L  
SEQ. ID. NO. 17 D S V L A R Y L D E I N L L

Figure 4b

ClustalW Formatted Alignments

SEQ. ID. NO. 18 A T G G C A T T T A T A G C T G C T G C T G G G  
SEQ. ID. NO. 19 A T G T T G C T G C T G C T G C T A C T G G C G C  
SEQ. ID. NO. 20 A T G G G G C C C G G G G C C C C T T T G C C C  
SEQ. ID. NO. 21 A T G G C T T C C C C G C G G A G C T C C G G G C

SEQ. ID. NO. 18 T C C T C T T G G C A C T C A C C T G G C A C A C  
SEQ. ID. NO. 19 C A C T C T T C C T C C G C C C C C G G G C G C  
SEQ. ID. NO. 20 G G G T G G G G T G G C C A C T G C C G C T T C T  
SEQ. ID. NO. 21 A G C C C G G G C C G C - G C C G C C G C C G C C

SEQ. ID. NO. 18 C T C T G C C T A C G G G G C C A G A C C A G C G A  
SEQ. ID. NO. 19 G G G C G G G G G C G C A G A C C C C C A A C G C C  
SEQ. ID. NO. 20 G G T T G T G A T G G C G G C A G G G G T G G C T  
SEQ. ID. NO. 21 A C C G C C G C C C G C G G C C T G C T A C T G

SEQ. ID. NO. 18 G C C C A A A A G A A A G G G G G A C A T T A T C C  
SEQ. ID. NO. 19 A C C T C A G A A A G G T T G C C A G A T C A T A C  
SEQ. ID. NO. 20 C C G G T G T G G G C C T C C C A C T C C C C C C  
SEQ. ID. NO. 21 C T A C T G C T G C T G C C G C T G C T G C T G C

SEQ. ID. NO. 18 T T G G G G G G C T C T T C C T A T T C A T T T  
SEQ. ID. NO. 19 A C C C G C C C T G G G A A G G G G G C A T C A G  
SEQ. ID. NO. 20 A T C T C C C G C G G G C T C A C T C G G G G T  
SEQ. ID. NO. 21 C T C T G G C G C C C G G G C C T G G G G C T G

SEQ. ID. NO. 18 T G G A G T A G C A G C T A A A G A T C A A G A T  
SEQ. ID. NO. 19 G T A C C G G G G G C T G A C T C G G G A C C A G  
SEQ. ID. NO. 20 C C C C C C G C A C C C C T C C T C A G A A C G G  
SEQ. ID. NO. 21 G G C G C G G G G C G C C C C C G G C C G C C G

SEQ. ID. NO. 18 C T C A A A T C A A G G C C G G A G T C T G T G G  
SEQ. ID. NO. 19 G T G A A G G C T A T C A A C T T C C T G C C A G  
SEQ. ID. NO. 20 C G C G C A G T G T A C A T C G G G G C A C T G T  
SEQ. ID. NO. 21 C C C A G C A G C C C G C C G C T C T C C A T C A

SEQ. ID. NO. 18 A A T G T A T C A G G T A T A A T T T C C G T G G  
SEQ. ID. NO. 19 T G G A C T A T G A G A T T G A G T A T G T G T G  
SEQ. ID. NO. 20 T T C C C A T G A G C G G G G G C T G G C C A G G  
SEQ. ID. NO. 21 T G G G C C T C A T G C C G C T C A C C A A G G A

Figure 5a

SEQ. ID. NO. 18 G T T T C G C T G G T T A C A G G C T A T G A T A  
SEQ. ID. NO. 19 C C G G G G G G G A G C G C G A G G T G G T G G G G  
SEQ. ID. NO. 20 G G G C C A G G C C T G C C A G C C C G C G G T G  
SEQ. ID. NO. 21 G G T G G C C A A G G G C A G C A T C G G G C G C

SEQ. ID. NO. 18 T T T G C C A T A G A G G G A G A T A A A C A G C A  
SEQ. ID. NO. 19 C C C A A G G T C C G C A A G T G C C T G G C C A  
SEQ. ID. NO. 20 G A G A T G G C G C T G G A G G A C G T G A A T A  
SEQ. ID. NO. 21 G G T G T G C T C C C C G C C G T G G A A C T G G

SEQ. ID. NO. 18 G C C C A G C C C T T C T T C C C A A C T T G A C  
SEQ. ID. NO. 19 A C G G C T C C T G G A C A G A T A T G G A C A C  
SEQ. ID. NO. 20 G C C G C A G G G A C A T C C T G C C G G A C T A  
SEQ. ID. NO. 21 C C A T C G A G C A G A T C C G C A A C G A G T C

SEQ. ID. NO. 18 G C T G G G A T A C A G G A T A T T T G A C A C T  
SEQ. ID. NO. 19 A C C C A G C C G C T G T G T C C G A A T C T G C  
SEQ. ID. NO. 20 T G A G G C T C A A G G C T C A T C C A C C A C G A C  
SEQ. ID. NO. 21 A C T C C T G C G C C C T A C T T C C T C G A C

SEQ. ID. NO. 18 T G C A A C A C C G T T T C T A A G G C T T G G  
SEQ. ID. NO. 19 T C C A A G T C T T A T T T G A C C C T G G G A A A  
SEQ. ID. NO. 20 A G C A A G T G T G A T C C A G G C C A A G C C A  
SEQ. ID. NO. 21 C T G C G G C T C T A T G A C A C G G A G T G C G

SEQ. ID. NO. 18 A A G C C A C C C T G A G T T T G T T G C T C A  
SEQ. ID. NO. 19 A T G G G A A G G T T T C C T G A C G G G T G G  
SEQ. ID. NO. 20 C C A A G T A C C T A T A T G A G C T G C T C T A  
SEQ. ID. NO. 21 A C A A C G C A A A A G G G T T G A A A G C C T T

SEQ. ID. NO. 18 A A A C A A A A T T G A T T C T T G A A C C T T  
SEQ. ID. NO. 19 G G A C C T C C C A G C T C T G G A C G G G A G C C  
SEQ. ID. NO. 20 C A A C G A C C C T A T C A A G A T C A T C C T T  
SEQ. ID. NO. 21 C T A C G A T G C A A T A A A A T A C G G G C C G

SEQ. ID. NO. 18 G A T G A G T T C T G C A A C T G C T C A G A G C  
SEQ. ID. NO. 19 C G G G T G G A T T T C C G G T G T G A C C C C G  
SEQ. ID. NO. 20 A T G C C T G G C T G C A G C T C T G T C T C C A  
SEQ. ID. NO. 21 A A C C A C T T G A T G G T G T T T G G A G G C G

Figure 5b

SEQ. ID. NO. 18 A C A T T C C C T C T A C G A T T G C T G T G G T  
SEQ. ID. NO. 19 A C T T C C A T C T G G T G G G C A G C T C C C G  
SEQ. ID. NO. 20 C G C T G G T G G C T G A G G C T G C T A G G A T  
SEQ. ID. NO. 21 T C T G T C C A T C C G T C A C A T C C A T C A T

SEQ. ID. NO. 18 G G G A G C A A C T G G C T C A G G C G T C T C C  
SEQ. ID. NO. 19 G A G C A T C T G T A G T C A G G G C C A G T G G  
SEQ. ID. NO. 20 G T G G A A C C T C A T T G T G C T T T C C T A T  
SEQ. ID. NO. 21 T G C A G A G T C C C T C C A A G G C T G G A A T

SEQ. ID. NO. 18 A C G G C A G T G G C A A A T C T G C T G G G G C  
SEQ. ID. NO. 19 A G C A C C C C C A A G C C C C A C T G C C A G G  
SEQ. ID. NO. 20 G G C T C C A G C T C A C C A G C C C T G T C A A  
SEQ. ID. NO. 21 C T G G T G C A G C T T T C T T T G C T G C A A

SEQ. ID. NO. 18 T C T T C T A C A T T C C C C A G G T C A G T T A  
SEQ. ID. NO. 19 T G A A T C G A A C G G C C A C A C T C A G A A C G  
SEQ. ID. NO. 20 A C C G G C A G C G T T T C C C C A C T T T C T T  
SEQ. ID. NO. 21 C C A C G C C T G T T C T A G C C G A T A A G A A

SEQ. ID. NO. 18 T G C C T C C T C C A G C A G A C T C C T C A G C  
SEQ. ID. NO. 19 G C G C G C A G T G T A C A T C G G G G C A C T G  
SEQ. ID. NO. 20 C C G A A C G C A C C C A T C A G C C A C A C T C  
SEQ. ID. NO. 21 A A A A T A C C C T T A T T T C T T T C G G A C C

SEQ. ID. NO. 18 A A C A A G A A T C A A T T C A A G T C T T T C C  
SEQ. ID. NO. 19 T T T C C C A T G A G C G G G G G C T G G C C A G  
SEQ. ID. NO. 20 C A C A A C C C T A C C C G G C T G A A A C T C T  
SEQ. ID. NO. 21 G T C C C A T C A G A C A A T G C G G T G A A T C

SEQ. ID. NO. 18 T C C G A A C C A T C C C C A A T G A T G A G C A  
SEQ. ID. NO. 19 G G G G C C A G G C C T G C C A G C C C G C G G T  
SEQ. ID. NO. 20 T T G A A A A G T G G G G C T G G A A G A A G A T  
SEQ. ID. NO. 21 C A G C C A T T C T G A A G T T G C T C A A G C A

SEQ. ID. NO. 18 C C A G G C C A C T G C C A T G G C A G A C A T C  
SEQ. ID. NO. 19 G G A G A T G G C G G C T G G A G G A C G T G A A T  
SEQ. ID. NO. 20 T G C T A C C A T C C A G C A G A C C A C T G A G  
SEQ. ID. NO. 21 C T A C C A G T G G A A G C G C G T G G G C A C G

Figure 5c

SEQ. ID. NO. 18 ATCGAGTATTCGGCTGGAAACTGGG  
SEQ. ID. NO. 19 AGCCCGCAGGGACATCCCTGCCGGACT  
SEQ. ID. NO. 20 GTCTTCACTTCGACTCTGGACGACCC  
SEQ. ID. NO. 21 CTGACGCAAGACGTTCAAGAGGTTCT

SEQ. ID. NO. 18 TGGGCACAAATTGCAGCTGATGACGA  
SEQ. ID. NO. 19 ATGAGCTCAAGCTCATCCACCAACGA  
SEQ. ID. NO. 20 TGGAGGAACGAGTGAAGGAGGCTGG  
SEQ. ID. NO. 21 CTGAGGTGCGGAATGACCTGACTGG

SEQ. ID. NO. 18 CTATGGGGCGGCCGGGATTGAGAAA  
SEQ. ID. NO. 19 CAGCAAGTGTGATCCAGGCCAAGCC  
SEQ. ID. NO. 20 AATTGAGATTACTTTCCGCCAGAGT  
SEQ. ID. NO. 21 AGTTCTGTATGGCGAGGACATTGAG

SEQ. ID. NO. 18 TTCCGAGAGGAAGCTGAGGAAAGGG  
SEQ. ID. NO. 19 ACCAAGTACCTATATGAGCTGCTCT  
SEQ. ID. NO. 20 TTCTTCTCAGATCCAGCTGTGCCCCG  
SEQ. ID. NO. 21 ATTTCAGACACCGAGAGCTTCTCCA

SEQ. ID. NO. 18 ATATCTGCATCGACTTCAGTGAAC  
SEQ. ID. NO. 19 ACAACGACCCCTATCAAGATCATCCT  
SEQ. ID. NO. 20 TCAAAAAACCTGAAGGCCAGGATGC  
SEQ. ID. NO. 21 ACGATCCCTGTACCAAGTGTCAAAAAA

SEQ. ID. NO. 18 CATCTCCCACTCTGATGAGGAA  
SEQ. ID. NO. 19 TATGCCCTGGCTGCAGCTCTGCTTCC  
SEQ. ID. NO. 20 CCGAATCATCGTGGACTTTCTAT  
SEQ. ID. NO. 21 GCTGAAAGGGAAATGATGTGCGGATC

SEQ. ID. NO. 18 GAGATCCAGCATTGGTAGAGGTGA  
SEQ. ID. NO. 19 ACGCTGGTGGCTGAGGCTGCTAGGA  
SEQ. ID. NO. 20 GAGACTGAAGCCCGGAAAGTTTTT  
SEQ. ID. NO. 21 ATCCTTGGCCAGTTGACCAAGAATA

SEQ. ID. NO. 18 TTCAAAATTCCACGGCCAAAGTCAT  
SEQ. ID. NO. 19 TGTGGAACCTCATTTGTGCTTTCTA  
SEQ. ID. NO. 20 GTGAGGTGTACAAGGAGCGTCTCTT  
SEQ. ID. NO. 21 TGGCAGCAAAAGTGTCTGTTGTC

Figure 5d

SEQ. ID. NO. 18 C G T G G T T T T C T C C A G T G G C C C A G A T  
SEQ. ID. NO. 19 T G G C T C C A G C T C A C C A G C C C T G T C A  
SEQ. ID. NO. 20 T G G G A A G A A G T A C G T C T G G T T C C T C  
SEQ. ID. NO. 21 A T A C G A G G A G A A C A T G T A T G G T A G T

SEQ. ID. NO. 18 C T T G A G C C C C T C A T C A A G G A G A T T G  
SEQ. ID. NO. 19 A A C C G G C A G C G T T T C C C C A C T T T C T  
SEQ. ID. NO. 20 A T T G G G T G G T A T G C T G A C A A T T G G T  
SEQ. ID. NO. 21 A A A T A T C A G T G G A T C A T T C C G G G C T

SEQ. ID. NO. 18 T C C G G C G C A A T A T C A C G G G C A A G A T  
SEQ. ID. NO. 19 T C C G A A C G C A C C C A T C A G C C A C A C T  
SEQ. ID. NO. 20 T C A A G A T C T A C G A C C C T T C T A T C A A  
SEQ. ID. NO. 21 G G T A C G A G C C T T C T T G G T G G G A G C A

SEQ. ID. NO. 18 C T G G C T G G C C A G C G A G G C C T G G G C C  
SEQ. ID. NO. 19 C C A C A A C C C T A C C C G C G T G A A A C T C  
SEQ. ID. NO. 20 C T G C A C A G T G G A T G A G A T G A C T G A G  
SEQ. ID. NO. 21 G G T G C A C A C G G A A G C C A A C T C A T C C

SEQ. ID. NO. 18 A G C T C C T C C C T G A T C G C C A T G C C T C  
SEQ. ID. NO. 19 T T T G A A A A A G T G G G G C T G G A A G A A G A  
SEQ. ID. NO. 20 G C G G T G G A G G G C C A C A T C A C A A C T G  
SEQ. ID. NO. 21 C G C T G C C T C C G G A A G A A T C T G C T T G

SEQ. ID. NO. 18 A G T A C T T C C A C C G T G G T T G G C G G C A C  
SEQ. ID. NO. 19 T T G C T A C C A T C C A G C A G A C C A C T G A  
SEQ. ID. NO. 20 A G A T T G T C A T G C T G A A T C C T G C C A A  
SEQ. ID. NO. 21 C T G C C A T G G A G G G C T A C A T T G G C G T

SEQ. ID. NO. 18 C A T T G G A T T C G C T C T G A A G G C T G G G  
SEQ. ID. NO. 19 G G T C T T C A C T T C G A C T C T G G A C G A C  
SEQ. ID. NO. 20 T A C C C G C A G C A T T T C C A A C A T G A C A  
SEQ. ID. NO. 21 G G A T T T C G A G C C C C T G A G C T C C A A G

SEQ. ID. NO. 18 C A G A T C C C A G G G C T T C C G G G A A T T C C  
SEQ. ID. NO. 19 C T G G A G G G A A C G A G T G A A G G A G G G C T G  
SEQ. ID. NO. 20 T C C C A G G A A T T T G T G G A G A A A C T A A  
SEQ. ID. NO. 21 C A G A T C A A G A C C A T C T C A G G A A A G A

Figure 5e

SEQ. ID. NO. 18 T G A A G A A G G T C C A T C C C A G G A A G T C  
SEQ. ID. NO. 19 G A A T T G A G A T T A C T T T C C G G C A G A G  
SEQ. ID. NO. 20 C C A A G C G A C T G A A A A A G A C A C C C T G A  
SEQ. ID. NO. 21 C T C C A C A G C A G T A T G A G A G A G A G T A

SEQ. ID. NO. 18 T G T C C A C A A T G G T T T G C C A A G G A G  
SEQ. ID. NO. 19 T T T C T T C T C A G A T C C A G C T G T G C C C  
SEQ. ID. NO. 20 G G A G A C A G G A G G G C T T C C A G G A G G C A  
SEQ. ID. NO. 21 C A A C A A C A A G C G G T C A G G C G T G G G G

SEQ. ID. NO. 18 T T T T G G G A A G A A A C A T T A A C T G C C  
SEQ. ID. NO. 19 G T C A A A A A A C C T G A A G C G C C A G G A T G  
SEQ. ID. NO. 20 C C G C T G G C C T A T G A T G C C A T C T G G G  
SEQ. ID. NO. 21 C C C A G C A A G T T C C A C G G G T A C G C C T

SEQ. ID. NO. 18 A C C T C C A A G A A G G T G C A A A A G G A C C  
SEQ. ID. NO. 19 C C C G A A T C A T C G T G G G A C T T T T C T A  
SEQ. ID. NO. 20 C C T T G G C A C T G G C C C T G A A A C A A G A C  
SEQ. ID. NO. 21 A C G A T G G C A T C T G G G T C A T C G C C A A

SEQ. ID. NO. 18 T T T A C C T G T G G A C A C C T T T C T G A G A  
SEQ. ID. NO. 19 T G A G A C T G A A G C C C G G A A A G T T T T  
SEQ. ID. NO. 20 A T C T G G A G G A G G G G G G G C G T T C T G G T  
SEQ. ID. NO. 21 G A C A C T G C A G A G G G C C A T G G A G A C A

SEQ. ID. NO. 18 G G T C A C G A A G A A A G T G G G C G A C A G G T  
SEQ. ID. NO. 19 T G T G A G G G T G T A C A A G G A G G C G T C T C T  
SEQ. ID. NO. 20 G T G C G C C T G G A G G A C T T C A A C T A C A  
SEQ. ID. NO. 21 C T G C A T G C C A G C A G C C G G C A C C A G C

SEQ. ID. NO. 18 T T A G C A A C A G C T C G A C A G C C T T C C G  
SEQ. ID. NO. 19 T T G G G A A G A A G T A C G T C T G G T T C C T  
SEQ. ID. NO. 20 A C A A C C A G A C C A T T A C C G A C C A A A T  
SEQ. ID. NO. 21 G G A T C C A G G A C T T C A A C T A C A C C G G A

SEQ. ID. NO. 18 A C C C C T C T G T A C A G G G G A T G A G A A C  
SEQ. ID. NO. 19 C A T T G G G T G G T A T G C T G A C A A T T G G  
SEQ. ID. NO. 20 C T A C C G G G C A A T G A A A C T C T T C G T C C  
SEQ. ID. NO. 21 C C A C A C G C T G G G C A G G A T C A T C C C T C

Figure 5f

SEQ. ID. NO. 18 A T C A G C A G T G T C G A G A C C C C T T A C A  
SEQ. ID. NO. 19 T T C A A G A T C T A C G A C C C T T C T A T C A  
SEQ. ID. NO. 20 T T T G A G G G T G T C T C T G G C C A T G T G G  
SEQ. ID. NO. 21 A A T G C C A T G A A C G A G A C C A A C T T C T

SEQ. ID. NO. 18 T A G A T T A C A C G C A T T A C G G A T A T C  
SEQ. ID. NO. 19 A C T G C A C A G T G G A T G A G A T G A C T G A  
SEQ. ID. NO. 20 T G T T T G A T G C C A G C G G C T C T C G G A T  
SEQ. ID. NO. 21 T C G G G G T C A C G G G T C A A G T T G T A T T

SEQ. ID. NO. 18 C T A C A A T G T G T A C T T A G C A G T C T A C  
SEQ. ID. NO. 19 G G C G G T G G A G G G C C A C A T C A C A A C T  
SEQ. ID. NO. 20 G G C A T G G A C G G C T T A T C G A G G C A G C T T  
SEQ. ID. NO. 21 C C G G A A T G G G G A G A G A A T G G G G A C C

SEQ. ID. NO. 18 T C C A T T G C C C A C G C C T T G C A A G A T A  
SEQ. ID. NO. 19 G A G A T T G T C A T G C T G A A T C C T G C C A  
SEQ. ID. NO. 20 C A G G G T G G C A G C T A C A A G A A G A T T G  
SEQ. ID. NO. 21 A T T A A A T T T A C T C A A T T C A A G A C A

SEQ. ID. NO. 18 T A T A T A C C T G C T T A C C T G G G A G A G G  
SEQ. ID. NO. 19 A T A C C C G C A G C A T T T C C A A C A T G A C  
SEQ. ID. NO. 20 G C T A C T A T G A C A G C A C C A A G G A T G A  
SEQ. ID. NO. 21 G C A G G G A G G T G A A G G T G G G A G A G T A

SEQ. ID. NO. 18 G C T C T T C A C C A A T G G C T C C T G T G C A  
SEQ. ID. NO. 19 A T C C C A G G A A T T T G T G G A G A A A C T A  
SEQ. ID. NO. 20 T C T T T C C T G G T C C A A A A C A G A T A A A  
SEQ. ID. NO. 21 C A A C G C T G T G G C C G A C A C A C T G G A G

SEQ. ID. NO. 18 G A C A T C A A G A A A G T T G A G G G C G T G G C  
SEQ. ID. NO. 19 A C C A A G C G A C T G A A A A A G A C A C C C T G  
SEQ. ID. NO. 20 T G G A T T G G A G G G T C C C C C C C C A G C T G  
SEQ. ID. NO. 21 A T C A T C A A T G A C A C C A T C A G G T T C C

SEQ. ID. NO. 18 A G G T C C T G A A G C A C C T A C G G C A T C T  
SEQ. ID. NO. 19 A G G A G A C A G G G A G G G C T T C C A G G A G G C  
SEQ. ID. NO. 20 A C C A G A C C C T G G T C A T C A A G A C A T T  
SEQ. ID. NO. 21 A A G G A T C C G A A C C A C C A A A A G A C A A

Figure 5g

SEQ. ID. NO. 18 A A A C T T T A C A A A C A A T A T G G G G G A G  
SEQ. ID. NO. 19 A C C G C T G G C C T A T G A T G C C A T C T G G  
SEQ. ID. NO. 20 C C G C T T C C T G T C A C A G A A A C T C T T  
SEQ. ID. NO. 21 G A C C A T C A T C C T G G A G C A G C T G C G G

SEQ. ID. NO. 18 C A G G T G A C C T T T G A T G A G T G T G G T G  
SEQ. ID. NO. 19 G C C T T G G C A C T G G C C C T G A A C A A G A  
SEQ. ID. NO. 20 A T C T C C G T C T C A G T T C T C T C C A G C C  
SEQ. ID. NO. 21 A A G A T C T C C C T A C C T C T C T A C A G C A

SEQ. ID. NO. 18 A C C T G G T G G G G A A C T A T T C C A T C A T  
SEQ. ID. NO. 19 C A T C T G G A G G G A G G G C G G C G T T C T G G  
SEQ. ID. NO. 20 T G G G C A T T G T C C T A G C T G T G T C T G  
SEQ. ID. NO. 21 T C C T C T G C C C T C A C C A T C C T C G G

SEQ. ID. NO. 18 C A A C T G G C A C C T C T C C C C A G A G G A T  
SEQ. ID. NO. 19 T G T G C G C C T G G A G G A C T T C A A C T A C  
SEQ. ID. NO. 20 T C T G T C C T T A A C A T C T A C A A C T C A  
SEQ. ID. NO. 21 G A T G A T C A T G G C C A G T G C T T T C T C

SEQ. ID. NO. 18 G G C T C C A T C G T G T T A A G G A A G T C G  
SEQ. ID. NO. 19 A A C A A C C A G A C C A T T A C C G A C C A A A  
SEQ. ID. NO. 20 C A T G T C C G T T A T A T C C A G A A C T C A C  
SEQ. ID. NO. 21 T T C T T C A A C A T C A A G A A C C G G A A T C

SEQ. ID. NO. 18 G G T A T T A C A A C G T C T A T G C C A A G A A  
SEQ. ID. NO. 19 T C T A C C G G G C A A T G A A C T C T T C G T C  
SEQ. ID. NO. 20 A G C C C A A C C T G A A C A A C C T G A C T G C  
SEQ. ID. NO. 21 A G A A G C T C A T A A A G A T G T C G A G T C C

SEQ. ID. NO. 18 G G G A G A A A G A C T C T T C A T C A A C G A G  
SEQ. ID. NO. 19 C T T T G A G G G T G T C T C T G G C C A T G T G  
SEQ. ID. NO. 20 T G T G G G C T G C T C A C T G G C T T T A G C T  
SEQ. ID. NO. 21 A T A C A T G A A C A A C C T T A T C A T C C T

SEQ. ID. NO. 18 G A G A A A A A T C C T G T G G A G T G G G T T C T  
SEQ. ID. NO. 19 G T G T T T G A T G C C A G C G G C T C T C G G A  
SEQ. ID. NO. 20 G C T G T C T T C C C C C T G G G G C T C G A T G  
SEQ. ID. NO. 21 G G A G G G A T G C T C T C C T A T G C T T C C A

Figure 5h

SEQ. ID. NO. 18 CCAGGGAGGTGCCCTTCTCCAACTG  
SEQ. ID. NO. 19 TGGCATGGACGCCCTTATCGAGCAGCT  
SEQ. ID. NO. 20 GTTACCAACATTGGGAGGAACCAGTT  
SEQ. ID. NO. 21 TATTTCTCTTGGCCTTGATGGATC

SEQ. ID. NO. 18 CAGCCCGAGACTGCCCTGGCAGGGACC  
SEQ. ID. NO. 19 TCAGGGTGGCAGCTACAAGAAAGATT  
SEQ. ID. NO. 20 TCCCTTCGCTCTGCCAGGCCGCTC  
SEQ. ID. NO. 21 CTTTGTCTCTGAAAAAGACCTTTGAA

SEQ. ID. NO. 18 AGGAAAGGGATCATTGAGGGGGAGC  
SEQ. ID. NO. 19 GGCTACTATGACAGCACCAAGGGATG  
SEQ. ID. NO. 20 TGGCTCCCTGGGCTGGGCTTTAGTC  
SEQ. ID. NO. 21 ACACCTTGCACCGTCAGGACCTGGA

SEQ. ID. NO. 18 CCACCTGCTGCTTTGAGTGTGTGGA  
SEQ. ID. NO. 19 ATCTTTCCCTGGTCCAAAAACAGATAAA  
SEQ. ID. NO. 20 TGGGCTACGGTTCCATGTTCACCAA  
SEQ. ID. NO. 21 TTCTCACCGTGGGCTACACGACCGC

SEQ. ID. NO. 18 GTGTCCCTGATGGGGAGTATAGTGAT  
SEQ. ID. NO. 19 ATGGATTGGAGGGTCCCCCCCAGCT  
SEQ. ID. NO. 20 GATTTGGTGGGTCACACGGTCTTC  
SEQ. ID. NO. 21 TTTTGGGCCATGTTGCAAAGACC

SEQ. ID. NO. 18 GAGACAGATGCCAGTGCCTGTAACA  
SEQ. ID. NO. 19 GACCAGACCCCTGGTCATCAAGACAT  
SEQ. ID. NO. 20 ACAAAAGAAGGAAGAAAAAGAAGGGAGT  
SEQ. ID. NO. 21 TGGAGAGTCCACGCCATCTTCACAA

SEQ. ID. NO. 18 AGTGCCCCAGATGACTTCTGGTCCAA  
SEQ. ID. NO. 19 TCCGCTTCCTGTCACAGAAACTCTT  
SEQ. ID. NO. 20 GGAGGAAGACTCTGGAACCCCTGGAA  
SEQ. ID. NO. 21 ATGTGAAAAATGAAGAAGAAGATCAT

SEQ. ID. NO. 18 TGAGAACCAACACCTCCCTGCATTGCC  
SEQ. ID. NO. 19 TATCTCCGTCTCAGTTCTCTCCAGC  
SEQ. ID. NO. 20 GCTGTATGCCACAGTGGGCCCTGCTG  
SEQ. ID. NO. 21 CAAGGACCAAGAAACTGCTTGTGATC

Figure 5i

SEQ. ID. NO. 18 A A G G A G A T C G A G T T T C T G T C G T G G A  
SEQ. ID. NO. 19 C T G G G C A T T G T C C T A G C T G T T G T C T  
SEQ. ID. NO. 20 G T G G G C A T G G A T G T C C T C A C T C T C G  
SEQ. ID. NO. 21 G T G G G G G C A T G C T G C T G A T C G A C C

SEQ. ID. NO. 18 C G G A G C C C T T T G G G A T C G C A C T C A C  
SEQ. ID. NO. 19 G T C T G T C C T T T A A C A T C T A C A A C T C  
SEQ. ID. NO. 20 C C A T C T G G C A G A T C G T G G A C C C T C T  
SEQ. ID. NO. 21 T G T G T A T C C T G A T C T G C T G G C A G G C

SEQ. ID. NO. 18 C C T C T T T G C C G T G C T G G G C A T T T C  
SEQ. ID. NO. 19 A C A T G T C C G T T A T A T C C A G A A C T C A  
SEQ. ID. NO. 20 G C A C C G G A C C A T T G A G A C A T T T G C C  
SEQ. ID. NO. 21 T G T G G A C C C C C T G C G A A G G A C A G T G

SEQ. ID. NO. 18 C T G A C A G C C T T T G T G C T G G G G T G T  
SEQ. ID. NO. 19 C A G C C C A A C C T G A A C A A C C T G A C T G  
SEQ. ID. NO. 20 A A G G A G G G A A C C T A A G G A A A G A T A T T G  
SEQ. ID. NO. 21 G A G A A G T A C A G C A T G G A G G C C G G A C C

SEQ. ID. NO. 18 T T A T C A A G T T C C G C A A C A C A C C C A T  
SEQ. ID. NO. 19 C T G T G G G C T G C T C A C T G G C T T T A G C  
SEQ. ID. NO. 20 A C G T C T C T A T T C T G C C C C A G C T G G A  
SEQ. ID. NO. 21 C A G C A G G A C G G G A T A T C T C C A T C C G

SEQ. ID. NO. 18 T G T C A A G G C C A C C A A C C G A G A G C T C  
SEQ. ID. NO. 19 T G C T G T C T T C C C C C T G G G G C T C G A T  
SEQ. ID. NO. 20 G C A T T G C A G C T C C A G G A A A G A T G A A T  
SEQ. ID. NO. 21 C C C T C C C T G G A G C A C T G T G A G A A C

SEQ. ID. NO. 18 T C C T A C C T C C T C C T C T T C T C C C T G C  
SEQ. ID. NO. 19 G G T T A C C A C A T T G G G A G G A A C C A G T  
SEQ. ID. NO. 20 A C A T G G C T T G G C A T T T T C T A T G G T T  
SEQ. ID. NO. 21 A C C C A T A T G A C C A T C T G G C T T G G C A

SEQ. ID. NO. 18 T C T G C T G C T T C T C C A G C T C C C T G T T  
SEQ. ID. NO. 19 T T C C T T T C G T C T G C C A G G C C C G C C T  
SEQ. ID. NO. 20 A C A A G G G G C T G C T G C T G C T G C T G G G  
SEQ. ID. NO. 21 T C G T C T A T G C C T A C A A G G G A C T T C T

Figure 5j

SEQ. ID. NO. 18 C T T C A T C G G G G A G C C C C A G G A C T T G G  
SEQ. ID. NO. 19 C T G G C T C C T G G G C C T G G G C T T T A G T  
SEQ. ID. NO. 20 A A T C T T C C T T G C T T A T G A G A C C A A G  
SEQ. ID. NO. 21 C A T G T T G T T C G G T T G T T C T T A G C T

SEQ. ID. NO. 18 A C G T G C C G C C T G C G C C A G C C G G C T  
SEQ. ID. NO. 19 C T G G G C T A C G G T T C C A T G T T C A C C A  
SEQ. ID. NO. 20 A G T G T G T C C A C T G A G A A G A T C A A T G  
SEQ. ID. NO. 21 T G G G A G A C C C G C A A C G T C A G C A T C C

SEQ. ID. NO. 18 T T G G C A T C A G C T T C G T G C T C T G C A T  
SEQ. ID. NO. 19 A G A T T T G G T G G G T C C A C A C G G T C T T  
SEQ. ID. NO. 20 A T C A C C G G G C T G T G G G C A T G G C T A T  
SEQ. ID. NO. 21 C C G C A C T C A A C G A C A G C A A G T A C A T

SEQ. ID. NO. 18 C T C A T G C A T C C T G G T G A A A A C C A A C  
SEQ. ID. NO. 19 C A C A A A G A A G G A A G A A A A A G A A G G A G  
SEQ. ID. NO. 20 C T A C A A T G T G G C A G T C C T G T G C C T C  
SEQ. ID. NO. 21 C G G G A T G A G T G T C T A C A A C G T G G G G

SEQ. ID. NO. 18 C G T G T C C T C C T G G T G T T G A G G C C A  
SEQ. ID. NO. 19 T G G A G G A A G A C T C T G G A A C C C T G G A  
SEQ. ID. NO. 20 A T C A C T G C T C C T G T C A C C A T G A T T C  
SEQ. ID. NO. 21 A T C A T G T G C A T C A T C G G G G C C G C T G

SEQ. ID. NO. 18 A G A T C C C C A C C A G C T T C C A C C G C A A  
SEQ. ID. NO. 19 A G C T G T A T G G C C A C A G T G G G C C T G C T  
SEQ. ID. NO. 20 T G T C C A G C C A G C A G G A T G C A G C C T T  
SEQ. ID. NO. 21 T C T C C T T C C T G A C C C G G A C C A G C C

SEQ. ID. NO. 18 G T G G T G G G G G C T C A A C C T G C A G T T C  
SEQ. ID. NO. 19 G G T G G G C A T G G A T G T C C T C A C T C T C  
SEQ. ID. NO. 20 T G C C T T T G C C T C T C T T G C C A T A G T T  
SEQ. ID. NO. 21 C A A T G T G C A G T T C T G C A T C G T G G C T

SEQ. ID. NO. 18 C T G C T G G T T T T C C T C T G C A C C T T C A  
SEQ. ID. NO. 19 G C C A T C T G G C A G A T C G T G G A C C C T C  
SEQ. ID. NO. 20 T T C T C C T C C T A T A T C A C T C T T G T T G  
SEQ. ID. NO. 21 C T G G T C A T C A T C T T C T G C A G C A C C A

Figure 5k

SEQ. ID. NO. 18 T G C A G A T T G T C A T C T G T G T G A T C T G  
SEQ. ID. NO. 19 T G C A C C G G A C C A T T G A G A C A T T T G C  
SEQ. ID. NO. 20 T G C T C T T G T G C C C A A G A T G C G C A G  
SEQ. ID. NO. 21 T C A C C C T C T G C C T G G T A T T C G T G C C

SEQ. ID. NO. 18 G C T C T A C A C C G G G C C C C C T C A A G C  
SEQ. ID. NO. 19 C A A G G A G G A A C C T A A G G A A G A T A T T  
SEQ. ID. NO. 20 G C T G A T C A C C C G A G G G G A A T G G C A G  
SEQ. ID. NO. 21 G A A G C T C A T C A C C C T G A G A A C A A A C

SEQ. ID. NO. 18 T A C C G G A A C C A G G A G C T G G A G G A T G  
SEQ. ID. NO. 19 G A C G T C T C T A T T C T G C C C C A G C T G G  
SEQ. ID. NO. 20 T C G G A G G G C G C A G G A C A C C A T G A A G A  
SEQ. ID. NO. 21 C C A G A T G C A G C A A C G C A G A A C A G G C

SEQ. ID. NO. 18 A G A T C A T C T T C A T C A C G T G C C A C G A  
SEQ. ID. NO. 19 A G C A T T G C A G C T C C A G G A A G A T G A A  
SEQ. ID. NO. 20 C A G G G T C A T C G A C C A A C A A C A A C G A  
SEQ. ID. NO. 21 G A T T C C A G T T C A C T C A G A A T C A G A A

SEQ. ID. NO. 18 G G G C T C C C T C A T G G C C C T G G G C T T C  
SEQ. ID. NO. 19 T A C A T G G C T T G G C A T T T T C T A T G G T  
SEQ. ID. NO. 20 G G A G G A G A A G T C C C G G C T G T T G G A G  
SEQ. ID. NO. 21 G A A A G A A G A T T C T A A A A C G T C C A C C

SEQ. ID. NO. 18 C T G A T C G G C T A C A C C T G C C T G C T G G  
SEQ. ID. NO. 19 T A C A A G G G G C T G C T G C T G C T G C T G G  
SEQ. ID. NO. 20 A A G G A G A A C C G T G A A C T T G G A A A A G A  
SEQ. ID. NO. 21 T C G G T C A C C A G T G T G A A C C A A G C C A

SEQ. ID. NO. 18 C T G C C A T C T G C T T C T T C T T G C C T T  
SEQ. ID. NO. 19 G A A T C T T C C T T G C T T A T G A G A C C A A  
SEQ. ID. NO. 20 T C A T T G C T G A G A A A A G A G G G A G C G T G T  
SEQ. ID. NO. 21 G C A C A T C C C G C C T G G A G G G C C T A C A

SEQ. ID. NO. 18 C A A G T C C C G G A A G C T G C C G G A G A A C  
SEQ. ID. NO. 19 G A G T G T G T C C A C T G A G A A G A T C A A T  
SEQ. ID. NO. 20 C T C T G A A C T G C G C C A T C A A C T C C A G  
SEQ. ID. NO. 21 G T C A G A A A A C C A T C G C C T G C G A A T G

Figure 51

SEQ. ID. NO. 18 TTCAATGAAGCCAAGTTCATCACCT  
SEQ. ID. NO. 19 GATCACCGGGCTGTGGGCATGGCTA  
SEQ. ID. NO. 20 TCTCGGCAGCAGCTCCGCTCCCGGC  
SEQ. ID. NO. 21 AAGATCACAGAGCTGGATAAAAGACT

SEQ. ID. NO. 18 TCAGCATGCTCATCTTCTTCATCGT  
SEQ. ID. NO. 19 TCTACAAATGTGGCAGTCCTGTGCC  
SEQ. ID. NO. 20 GCCACCCACCGACACCCCCAGAACCC  
SEQ. ID. NO. 21 TGGAAAGAGGTCAACCATGCAGCTGCA

SEQ. ID. NO. 18 CTGGATCTCCCTTCATTCCAGCCTAT  
SEQ. ID. NO. 19 CATCACTGCTCCTGTCAACCATGATT  
SEQ. ID. NO. 20 CTCCTGGGGGCCCTGCCAGGGGACCC  
SEQ. ID. NO. 21 GGACACACCAAGAAAAAGACCCACCTAC

SEQ. ID. NO. 18 GCCAGCACCTATGGCAAGTTGTCT  
SEQ. ID. NO. 19 CTGTCACGCCAGCAGGATGCAAGCCT  
SEQ. ID. NO. 20 CCTGAGCCCCCGACCGGCTTAGCT  
SEQ. ID. NO. 21 ATTAAACAGAACCACTACCAAGAGC

SEQ. ID. NO. 18 CTGCCGTAGAGGTGATTGCCATCCT  
SEQ. ID. NO. 19 TTGCCTTTGCCCTCTCTTGCCATAGT  
SEQ. ID. NO. 20 GTGATGGGAGTCGAGTGCATTGCT  
SEQ. ID. NO. 21 TCAATGACATCCTCAACCTGGGAAA

SEQ. ID. NO. 18 GGCAGCCAGCTTTGGCTTGCTGGCG  
SEQ. ID. NO. 19 TTTCTCCCTCCTATATCACCTCTTGT  
SEQ. ID. NO. 20 TTATAAGTGAGGGTAGGGTGAGGG  
SEQ. ID. NO. 21 CTTCACTGAAGCACAGATGGAGGA

SEQ. ID. NO. 18 TGCATCTTCTTCAACAAAGATCTACA  
SEQ. ID. NO. 19 GTGCTCTTTGTGCCCAAGATGCGCA  
SEQ. ID. NO. 20 GGACAGGCCAGTAGGGGGAGGGAAA  
SEQ. ID. NO. 21 AAGGCCATTTAAAAAAATCACCTCG

SEQ. ID. NO. 18 TCATTCCTTCAAGCCATCCCGCAA  
SEQ. ID. NO. 19 GGCTGATCACCCGAGGGGAATGGCA  
SEQ. ID. NO. 20 GGGAGAGGGGAAGGGCAGGGGACTC  
SEQ. ID. NO. 21 ATCAAAATCCCCAGCTACAGTGGAA

Figure 5m

SEQ. ID. NO. 18 C A C C A T C G A G G A G G T G C G T T G C A G C  
SEQ. ID. NO. 19 G T C G G A G G G C G C A G G A C A C C A T G A A G  
SEQ. ID. NO. 20 A G G A A G C A G G G G G T C C C C A T C C C C A  
SEQ. ID. NO. 21 C A C A A C A G A G C C C T C T C G A A C A T G C

SEQ. ID. NO. 18 A C C G C A G C T C A C G C T T T C A A G G T G G  
SEQ. ID. NO. 19 A C A G G G T C A T C G A C C A A C A A C A A C G  
SEQ. ID. NO. 20 G C T G G G A A G A A C A T G C T A T C C A A T C  
SEQ. ID. NO. 21 A A A G A T C C T A T A G A A G A T A T A A A C T

SEQ. ID. NO. 18 C T G C C C G G G C C A C G C T G C G C C G C A G  
SEQ. ID. NO. 19 A G G A G G A G A A G T C C C G G C T G T T G G A  
SEQ. ID. NO. 20 T C A T C T C T T G T A A A T A C A T G T C C C C  
SEQ. ID. NO. 21 C T C C A G A A C A C A T C C A G C G T C G G C T

SEQ. ID. NO. 18 C A A C G T C T C C C G C A A G C G G T C C A G C  
SEQ. ID. NO. 19 G A A G G A G A A C C G T G A A C T G G A A A A A G  
SEQ. ID. NO. 20 C T G T G A G T T C T G G G C T G A T T T G G G T  
SEQ. ID. NO. 21 G T C C C T C C A G C T C C C A T C C T C C A C

SEQ. ID. NO. 18 A G C C T T G G A G G C T C C A C G G G A T C C A  
SEQ. ID. NO. 19 A T C A T T G C T G A G A A A G A G G A G C G T G  
SEQ. ID. NO. 20 C T C T C A T A C C T C T G G G A A A C A G A C C  
SEQ. ID. NO. 21 C A C G C C T A C C T C C C A T C C A T C G G A G

SEQ. ID. NO. 18 C C C C C T C C T C C C A T C A G C A G C A A  
SEQ. ID. NO. 19 T C T C T G A A C T G C G C C A T C A G C T C C A  
SEQ. ID. NO. 20 T T T T T C T C T C T T A C T G C T T C A T G T A  
SEQ. ID. NO. 21 G C G T G G A C G C C A G C T G T G T C A G C C C

SEQ. ID. NO. 18 G A G C A A C A G C G A A G A C C C A T T C C C A  
SEQ. ID. NO. 19 G T C T C G G C A G C A G C T C C G C T C C C G G  
SEQ. ID. NO. 20 A T T T T G T A T C A C C T C T T C A C A A T T T  
SEQ. ID. NO. 21 C T G C G T C A G C C C C A C C G C C A G C C C C

SEQ. ID. NO. 18 C A G C C C G A G A G G G C A G A A G C A G C A G C  
SEQ. ID. NO. 19 C G C C A C C C A C C G A C A C C C C C A G A A C  
SEQ. ID. NO. 20 A G T T C G T A C C T G G C T T G A A G C T G C T  
SEQ. ID. NO. 21 C G C C A C A G A C A T G T G C C A C C C T C C T

Figure 5n

SEQ. ID. NO. 18 AGCCGGCTGGCCCCTAACCCAGCAAGA  
SEQ. ID. NO. 19 CCTCTGGGGGCCCTGCCAGGGGACCC  
SEQ. ID. NO. 20 CACTGCTCACACACGCTGCCCTCCCTCAG  
SEQ. ID. NO. 21 TCCGAGTCATGGTCTCGGGGCCCTGTA

SEQ. ID. NO. 18 GCAGCAGCAGCAGCAGCCCCCTGACCCCTC  
SEQ. ID. NO. 19 CCCCTGAGCCCCCGACCGGGCTTAGC  
SEQ. ID. NO. 20 CAGCCTCACCTGCACTCTTTCTCTTCC  
SEQ. ID. NO. 21 AGGGTGGGAGGGCTGGGCCCGGGC

SEQ. ID. NO. 18 CCACACAGCAGCAACGATCTCAGCAGC  
SEQ. ID. NO. 19 TGTGATGGGAGTCGAGTGCATTGTC  
SEQ. ID. NO. 20 CATGCAACACCCCTCTCTAGTTACC  
SEQ. ID. NO. 21 CTCCCCGTGACAGAACACACTGG

SEQ. ID. NO. 18 AGCCCCAGATGCAAGCAGAAGGTCA  
SEQ. ID. NO. 19 TTTATAAGTGAGGGTAGGGTGAGGG  
SEQ. ID. NO. 20 ACGGCAACCCCT  
SEQ. ID. NO. 21 GCAGAGGGTCTGCTGCAGAAACAC

SEQ. ID. NO. 18 CTTTGGCAGCGGGCACGGTCACCTTC  
SEQ. ID. NO. 19 AGGACAGGCCAGTAGGGGGAGGGAA  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 TGTCGGCTCTGGCTGGGAGAAGCT

SEQ. ID. NO. 18 TCACCTGAGCTTTGATGAGCCCTCAGA  
SEQ. ID. NO. 19 AGGGAGAGGGGAAGGGCAGGGGACT  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 GGGCACCATGGCTGGCCTCTCAGGA

SEQ. ID. NO. 18 AGAACGCCATGGCCCACGGGAATT  
SEQ. ID. NO. 19 CAGGAAGCAGGGGGTCCCCATCCCC  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 CCACCTGGATGGCACTCAGGTGGAC

SEQ. ID. NO. 18 TACGGCACCAAGAACTCCCTGGAGGGCC  
SEQ. ID. NO. 19 AGCTGGGAAGAACATGCTATCCAAT  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 AGGACGGGGCAGGGGGAGACTTGGC

Figure 5o

SEQ. ID. NO. 18 C A G A A A A G C A G C G A T A C G C T G A C C C  
SEQ. ID. NO. 19 C T C A T C T C T T G T A A A A T A C A T G T C C C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 A C C T G A C C T C G A G C C T T A T T T G T G A

SEQ. ID. NO. 18 G A C A C C A G C C A T T A C T C C C G C T G C A  
SEQ. ID. NO. 19 C C T G T G A G T T C T G G G G C T G A T T T G G G  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 A G T C C T T A T T C T T C A C A A A G A A G A

SEQ. ID. NO. 18 G T G C G G G G A A A C G G A C T T A G A T C T G  
SEQ. ID. NO. 19 T C T C T C A T A C C T C T G G G A A A C A G A C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 G G A A C G G A A A T G G G A C G T C T T C C T T

SEQ. ID. NO. 18 A C C G T C C A G G A A A C A G G T C T G C A A G  
SEQ. ID. NO. 19 C T T T T C T C T C T T A C T G C T T C A T G T  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 A A C A T C T G C A A A C A A A G G A G G G C G C T G

SEQ. ID. NO. 18 G A C C T G T G G G T G G A G A C C A G C G G C C  
SEQ. ID. NO. 19 A A T T T T G T A T C A C C T C T T C A C A A T T  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 G G A T A T C A A A C T T G C A A A A A A A A A A

SEQ. ID. NO. 18 A G A G G T G G A G G A C C C T G A A A G A G T T G  
SEQ. ID. NO. 19 T A G T T C G T A C C T G G C T T G A A A G C T G C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21 A A A A A A A A A A A A

SEQ. ID. NO. 18 T C C C C A G C A C T T G T A G T G T C C A G T T  
SEQ. ID. NO. 19 T C A C T G C T C A C A C G C T G C C T C C T C A  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18 C A C A G A G C T T T G T C A T C A G T G G T G G  
SEQ. ID. NO. 19 G C A G C C T C A C T G C A T C T T T C T C T T C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18 A G G C A G C A C T G T T A C A G A A A A C G T A  
SEQ. ID. NO. 19 C C A T G C A A C A C C C T C T T C T A G T T A C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18 G T G A A T T C A  
SEQ. ID. NO. 19 C A C G G C A A C C C C T G C A G C T C C T C T G  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 C C T T T G T G C T C T G T T C C T G T C C A G C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 A G G G G T C T C C C A A C A A G T G C T C T T  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 C C A C C C C A A A G G G G C C T C T C C T T T  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 C T C C A C T G T C A T A A T C T C T T C C A T  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 C T T A C T T G C C C T T C T A T A C T T T C T C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

SEQ. ID. NO. 18  
SEQ. ID. NO. 19 A C A T G T G G C T C C C C C T G A A T T T G C  
SEQ. ID. NO. 20  
SEQ. ID. NO. 21

Figure 5g

SEQ. ID. NO. 18

SEQ. ID. NO. 19

SEQ. ID. NO. 20

SEQ. ID. NO. 21

T T C C T T T G G G G A G C T C A T T C T T T C G

SEQ. ID. NO. 18

SEQ. ID. NO. 19

SEQ. ID. NO. 20

SEQ. ID. NO. 21

C C A A G G T C A C A T G C T C C C T T G C C T C

SEQ. ID. NO. 18

SEQ. ID. NO. 19

SEQ. ID. NO. 20

SEQ. ID. NO. 21

T G G C T C C G T G C A

Figure 5c

SEQ. ID. NO. 22 A T G C T G C T G C T G C T G C T G G T G C C T C T C T T C  
SEQ. ID. NO. 23 A T G G G C C C G G G G G A C C C T G T A C C C C A G T G

SEQ. ID. NO. 22 C T C C G C C C C C T G G G C G C T G G C G G G G G C A G  
SEQ. ID. NO. 23 G G G T G G C C G C T G C C T C T T C T G C T G G T G A T G

SEQ. ID. NO. 22 A C C C C C A A C G C C A C C T C G G A A G G T T G C C A G  
SEQ. ID. NO. 23 G C G G C T G G G G T G G C T C C G G T G T G G G C T C T

SEQ. ID. NO. 22 A T T A T A C A T C C G C C C T G G G A A G G T G G C A T C  
SEQ. ID. NO. 23 C A C T C C C C T C A T C T C C C G G G C C T C A C C C G

SEQ. ID. NO. 22 A G G T A C C G T G G C T T G A C T C G C G A C C A G G T G  
SEQ. ID. NO. 23 A G G G T C C C C C C G C A C C C C T C C T C A G A A C G G

SEQ. ID. NO. 22 A A G G C C A T C A A C T T C C T G C C T G T G G A C T A T  
SEQ. ID. NO. 23 C G T G C A G T A T A C A T C G G G G G C T G T T T C C C

SEQ. ID. NO. 22 G A G A T C G A A T A T G T G T G C C G A G G G G A G C G C  
SEQ. ID. NO. 23 A T G A G G G G G G C T G G C C G G G G G C C A G G C C

SEQ. ID. NO. 22 G A G G T G G T G G G G C C C A A G G T G C C G A A A T G C  
SEQ. ID. NO. 23 T G C C A G C C C G G T G G A G A T G G C G C T G G A G

SEQ. ID. NO. 22 C T G G C C A A C G G G C T C C T G G A C G G A T A T G G A C  
SEQ. ID. NO. 23 G A C G T T A A C A G C C G C A G A G A C A T C C T G C C G

SEQ. ID. NO. 22 A C A C C C A G C C G C T G T G T C C G A A T C T G C T C C  
SEQ. ID. NO. 23 G A C T A C G A G G C T C A A G C T T A T C C A C C A C G A C

SEQ. ID. NO. 22 A A G T C T T A T T T G A C C C T G G A A A A T G G G A A G  
SEQ. ID. NO. 23 A G C A A G T G T G A C C C A G G G C A A G C C A C C A A G

SEQ. ID. NO. 22 G T T T T C C T G A C G G G T G G G G A C C T C C C A G C T  
SEQ. ID. NO. 23 T A C T T G T A C G A A C T A C T C T A C A A T G A C C C C

Figure 6a

SEQ. ID. NO. 22 C T G G A T G G A G G C C C G G G T G G A G T T C C G A T G T  
SEQ. ID. NO. 23 A T C A A G A T C A T T C T C A T G C C T G G C T G T A G T

SEQ. ID. NO. 22 G A C C C C G A C T T C C A T C T G G T G G G C A G C T C C  
SEQ. ID. NO. 23 T C T G T C T C C A C A C T T G T A G C T G A G G C T G C C

SEQ. ID. NO. 22 C G G A G G C G T C T G T A G T C A G G G C C A G T G G A G C  
SEQ. ID. NO. 23 C G G A T G T G G A A C C T T A T T G T G C T C T C A T A T

SEQ. ID. NO. 22 A C C C C C A A G C C C C A C T G C C A G G T G A A T C G A  
SEQ. ID. NO. 23 G G C T C C A G T T C A C C A G C C T T G T C A A A C C G A

SEQ. ID. NO. 22 A C G C C A C A C A C T C A G A A C G G G C G T G C A G T A T A C  
SEQ. ID. NO. 23 C A G C G G T T T C C C A C G T T C T T C C G G A C G C A T

SEQ. ID. NO. 22 A T C G G G G C G C T G T T T C C C A T G A G C G G G G C  
SEQ. ID. NO. 23 C C A T C C G G C A C A C T C C A C A A T C C C A C C C G G

SEQ. ID. NO. 22 T G G C C G G G G G C C A G G C C T G C C A G C C C G C G  
SEQ. ID. NO. 23 G T G A A A C T C T T C G A A A A G T G G G G C T G G A A G

SEQ. ID. NO. 22 G T G G A G A T G G C G C T G G A G G A C G T T A A C A G C  
SEQ. ID. NO. 23 A A G A T C G C T A C C A T C C A A C A G A C C A C C G A G

SEQ. ID. NO. 22 C G C A G A G A C A T C C T G C C G G A C T A C G A G G C T C  
SEQ. ID. NO. 23 G T C T T C A C C T C A A C G C T G G A T G A C C T G G A G

SEQ. ID. NO. 22 A A G C T T A T C C A C C A C G A C A G C A A G T G T G A C  
SEQ. ID. NO. 23 G A G C G A G T G A A A G A G G G C T G G G A T C G A G A T C

SEQ. ID. NO. 22 C C A G G G C A A G C C A C C A A G T A C T T G T A C G A A  
SEQ. ID. NO. 23 A C T T T C C G A C A G A G T T T C T T C G G A T C C A

SEQ. ID. NO. 22 C T A C T C T A C A A T G A C C C C A T C A A G A T C A T T  
SEQ. ID. NO. 23 G C T G T G C C T G T T A A A A A C C T G A A G C G T C A A

SEQ. ID. NO. 22 C T C A T G C C T G G C T G T A G T T C T G T C T C C A C A  
SEQ. ID. NO. 23 G A T G C T C G A A T C A T C G T G G G A C T T T C T A T

Figure 6b

SEQ. ID. NO. 22 C T T G T A G C T G A G G G C T G C C C G G A T G T G G A A C  
SEQ. ID. NO. 23 G A G A C G G A A G C C C G G A A A G T T T T G T G A G

SEQ. ID. NO. 22 C T T A T T G T G C T C T C A T A T G G C T C C A G T T C A  
SEQ. ID. NO. 23 G T C T A T A A G G A A A G G C T C T T T G G G A A G A A G

SEQ. ID. NO. 22 C C A G C C T T G T C A A A A C C G A C A G C G G T T T C C C  
SEQ. ID. NO. 23 T A C G T C T G G T T C C T C A T C G G G T G G T A T G C T

SEQ. ID. NO. 22 A C G T T C T T C C G G A C G C A T C C A T C C G C C A C A  
SEQ. ID. NO. 23 G A C A A C T G G T T C A A G A C C T A T G A C C C G T C A

SEQ. ID. NO. 22 C T C C A C A A T C C C A C C C G G G T G A A A C T C T T C  
SEQ. ID. NO. 23 A T C A A T T G T A C A G T G G A A G A A A T G A C C G A G

SEQ. ID. NO. 22 G A A A A G T G G G G G T G G A A G A A G A T C G G T A C C  
SEQ. ID. NO. 23 G C G G T G G A G G G G C C A C A T C A C C A C G G A G A T T

SEQ. ID. NO. 22 A T C C A A C A G A C C A C C G A G G G T C T T C A C C T C A  
SEQ. ID. NO. 23 G T C A T G C T G A A C C C T G C C A A C A C C C G A A G C

SEQ. ID. NO. 22 A C G C T G G A T G A C C T G G A G G A G C G A G T G A A A  
SEQ. ID. NO. 23 A T T T C C A A C A T G A C G T C A C A G G A A T T T G T G

SEQ. ID. NO. 22 G A G G C T G G G A T C G A G A T C A C T T T C C G A C A G  
SEQ. ID. NO. 23 G A G A A A C T A A C C A A G C G G C T G A A A A G A C A C

SEQ. ID. NO. 22 A G T T T C T T C T C G G A T C C A G C T G T G C C T G T T  
SEQ. ID. NO. 23 C C C G A G G A G A C T G G A G G G T T C C A G G A G G C A

SEQ. ID. NO. 22 A A A A A C C T G A A G G C G T C A A G A T G C T C G A A A T C  
SEQ. ID. NO. 23 C C A C T G G C C T A T G A T G C T A T C T G G G C C T T G

SEQ. ID. NO. 22 A T C G T G G G A C T T T T C T A T G A G A G A C G G A A G C C  
SEQ. ID. NO. 23 G C T T T G G C C T T G A A A C A A G A C G T C T G G A G G A

SEQ. ID. NO. 22 C G G A A A G T T T T T G T G A G G G T C T A T A A G G A A  
SEQ. ID. NO. 23 G G T G G T C G T T C C G G C G T G C G C C T G G A G G G A C

Figure 6c

SEQ. ID. NO. 22 A G G C T C T T T G G G A A G A A G T A C G T C T G G T T C  
SEQ. ID. NO. 23 T T T A A C T A C A A C A A C C A G A C C A T T A C A G A C

SEQ. ID. NO. 22 C T C A T C G G G T G G T A T G C T G A C A A C T G G T T C  
SEQ. ID. NO. 23 C A G A T C T A C C G G G C A T G A A C T C C T C C T C C

SEQ. ID. NO. 22 A A G A C C T A T G A C C C G T C A A T C A A T T G T A C A  
SEQ. ID. NO. 23 T T T G A G G G C G T T T C T G G C C A T G T G G T C T T T

SEQ. ID. NO. 22 G T G G A A G A A A T G A C C G A G G C G G T G G A G G G C  
SEQ. ID. NO. 23 G A T G C C A G C G G C T C C C G G A T G G C A T G G A C A

SEQ. ID. NO. 22 C A C A T C A C C A C G G A G A T T G T C A T G C T G A A C  
SEQ. ID. NO. 23 C T T A T C G A G C A G C T A C A G G G C G G C A G C T A C

SEQ. ID. NO. 22 C C T G C C A A C A C C C G A A G C A T T T C C A A C A T G  
SEQ. ID. NO. 23 A A G A A G A T C G G C T A C T A C G A C A G C A C C A A G

SEQ. ID. NO. 22 A C G T C A C A G G A A T T T G T G G A G A A A C T A A C C  
SEQ. ID. NO. 23 G A T G A T C T T C C T G G T C C A A A A C G G A C A A G

SEQ. ID. NO. 22 A A G C G G G C T G A A A A G A C A C C C C G A G G A G A C T  
SEQ. ID. NO. 23 T G G A T T G G A G G G T C T C C C C C A G C T G A C C A G

SEQ. ID. NO. 22 G G A G G C T T C C A G G A G G G C A C C A C T G G C C T A T  
SEQ. ID. NO. 23 A C C T T G G T C A T C A A G A C A T T C C G T T T C C T G

SEQ. ID. NO. 22 G A T G C T A T C T G G G C C T T G G C T T T G G C C T T G  
SEQ. ID. NO. 23 T C T C A G A A A C T C T T T A T C T C C G T C T C A G T T

SEQ. ID. NO. 22 A A C A A A G A C G T C T G G A G G A G G T G G T C G T T C C  
SEQ. ID. NO. 23 C T C T C C A G C C T G G G C A T T G T T C T T G C T G T T

SEQ. ID. NO. 22 G G C G T G C G C C T G G A G G G A C T T T A A C T A C A A C  
SEQ. ID. NO. 23 G T C T G T C T G T C C T T T A A C A T C T A C A A C T C C

SEQ. ID. NO. 22 A A C C A G A C C A T T A C A G A C C A G A T C T A C C G G  
SEQ. ID. NO. 23 C A C G T T C G T T A T A T C C A G A A C T C C C A G C C C

Figure 6d

SEQ. ID. NO. 22 G C C A T G A A C T C C T C C T C C T T G A G G G C G T T  
SEQ. ID. NO. 23 A A C C T G A A C A A T C T G A C T G C T G T G G G C T G C

SEQ. ID. NO. 22 T C T G G G C A T G T G G T C T T G A T G C C A G C G G C  
SEQ. ID. NO. 23 T C A C T G G C A C T G G C T G C T G T C T T C C C T C T C

SEQ. ID. NO. 22 T C C C G G A T G G C A T G G A C A C T T A T C G A G C A G  
SEQ. ID. NO. 23 G G G C T G G A T G G T T A C C A C A T A G G G A G A A G C

SEQ. ID. NO. 22 C T A C A G G G C G G C A G C T A C A A G A A G A T C G G C  
SEQ. ID. NO. 23 C A G T T C C C G T T T G T C T G C C A G G C C C G C C T T

SEQ. ID. NO. 22 T A C T A C G A C A G C A C C A A G G A T G A T C T T T C C  
SEQ. ID. NO. 23 T G G C T C T T G G G C T T G G G C T T A G T C T G G G C

SEQ. ID. NO. 22 T G G T C C A A A A C G G A C A A G T G G A T T G G A G G G  
SEQ. ID. NO. 23 T A T G G C T C T A T G T T C A C C A A G A T C T G G T G G

SEQ. ID. NO. 22 T C T C C C C C A G C T G A C C A G A C C T T G G T C A T C  
SEQ. ID. NO. 23 G T C C A C A C A G T C T T C A C G A A G A A G G G A G G G

SEQ. ID. NO. 22 A A G A C A T T C C G T T T C C T G T C T C A G A A A C T C  
SEQ. ID. NO. 23 A A G A A G G A G T G G A G G A A G A C C C T A G A G C C C

SEQ. ID. NO. 22 T T T A T C T C C G T C T C A G T T C T C T C C A G C C T G  
SEQ. ID. NO. 23 T G G A A A C T C T A T G C C A C T G T G G G C C T G C T G

SEQ. ID. NO. 22 G G C A T T G T T C T T G C T G T T G T C T G T C T G T C C  
SEQ. ID. NO. 23 G T G G G C A T G G A T G T C C T G A C T C T T G C C A T C

SEQ. ID. NO. 22 T T T A A C A T C T A C A A C T C C C A C G T T C G T T A T  
SEQ. ID. NO. 23 T G G C A G A T T G T G G A C C C C T T G C A C C G A A C C

SEQ. ID. NO. 22 A T C C A G A A C T C C C A G C C C A A C C T G A A C A A T  
SEQ. ID. NO. 23 A T T G A G A C T T T G C C A A G G A G G A A C C A A A G

SEQ. ID. NO. 22 C T G A C T G C T G T G G G C T G C T C A C T G G C A C T G  
SEQ. ID. NO. 23 G A A G A C A T C G A T G T C T C C A T T C T G C C C C A G

Figure 6e

SEQ. ID. NO. 22 GCTGCTG.TCTTCCCTCTCGGGCTGGATGGT  
SEQ. ID. NO. 23 TTGGAGCACTGCAGCTCCAAGAAGATGAAT

SEQ. ID. NO. 22 TACCAACATAGGGAGAACGCCAGTTCCCGTT  
SEQ. ID. NO. 23 ACGTGGCTTGGCATTTCTATGGTTACAAG

SEQ. ID. NO. 22 GTC T G C C A G G C C C G C T T T G G C T C T T G G G C  
SEQ. ID. NO. 23 GGGCTGCTGCTGCTGGGAATCTTTCTT

SEQ. ID. NO. 22 TTGGGCTTTAGTCTGGCTATGGCTCTATG  
SEQ. ID. NO. 23 GCTTACGAAACCAAGAGCGTGTCCACTGAA

SEQ. ID. NO. 22 TTCAACCAAGATCTGGTGGGTCACACAGTC  
SEQ. ID. NO. 23 AAGATCAATGACCAACAGGGCCGTGGCATTG

SEQ. ID. NO. 22 TTCA CG AA AG A AGGAGGGAGAAGAAGGAGTGG  
SEQ. ID. NO. 23 GCTATCTACAAATGTCGGGTCCTGTGTCTG

SEQ. ID. NO. 22 AGGAAGACCCCTAGAGGCCCTGGAAACTCTAT  
SEQ. ID. NO. 23 ATCACTGCTCCGTGACCATGATCCTTTCC

SEQ. ID. NO. 22 GCCACTGTGGGCCCTGCTGGTGGCATGGAT  
SEQ. ID. NO. 23 AGTCAGCAGGACGCGACGCCCTTGCCTTGGC

SEQ. ID. NO. 22 GTCTGACTCTTGCATCTGGCAGATTGTG  
SEQ. ID. NO. 23 TCTCTGGCCATCGTGTCTCTTCCATACATC

SEQ. ID. NO. 22 GACCCCTTGCACCGAACCATTGAGACTTT  
SEQ. ID. NO. 23 ACTCTGGTTGTGCTCTTGTGCCAAGATG

SEQ. ID. NO. 22 GCCAAGGAGGAACCAAAGGAAGACATCGAT  
SEQ. ID. NO. 23 CGCAGGGCTGATCACCCGAGGGGAATGGCAG

SEQ. ID. NO. 22 GTCTCCATTCTGCCCTGGAGGCACCTGC  
SEQ. ID. NO. 23 TCTGAAACGGCAGGACACCATGAAAAACAGGA

SEQ. ID. NO. 22 AGCTCCAAGAACGATGAATACGTTGGAGC  
SEQ. ID. NO. 23 TCATCCACCAACAAACGAGGAAGAGAAAG

Figure 6f

SEQ. ID. NO. 22 A T T T T C T A T G G T T A C A A G G G G C T G C T G C T G  
SEQ. ID. NO. 23 T C C C G A C T G T T G G A G A A G G A A A A C C G A G A A

SEQ. ID. NO. 22 C T G C T G G G A A T C T T T C T T G C T T A C G A A A C C  
SEQ. ID. NO. 23 C T G G A A A A A G A T C A T C G C T G A G A A A G A G G A G

SEQ. ID. NO. 22 A A G A G C G T G T C C A C T G A A A A G A T C A A T G A C  
SEQ. ID. NO. 23 C G C G T C T C T G A A C T G C G C C A T C A G C T C C A G

SEQ. ID. NO. 22 C A C A G G G C C G T G G G C A T G G C T A T C T A C A A T  
SEQ. ID. NO. 23 T C T C G G C A G C A A C T C C G C T C A C G G C G C C A C

SEQ. ID. NO. 22 G T C G C G G T C C T G T G T C T C A T C A C T G C T C C T  
SEQ. ID. NO. 23 C C C C C A A C A C C C C A G A T C C C T C T G G G G G C

SEQ. ID. NO. 22 G T G A C C A T G A T C C T T C C A G T C A G C A G G A C  
SEQ. ID. NO. 23 C T T C C C A G G G G A C C C T C T G A G G C C C C T G A C

SEQ. ID. NO. 22 G C A G C C T T T G C C T T T G C C T C T C T G G C C A T C  
SEQ. ID. NO. 23 C G G C T T A G C T G T G A T G G G A G T C G A G T A C A T

SEQ. ID. NO. 22 G T G T T C T C T C C T A C A T C A C T C T G G T T G T G  
SEQ. ID. NO. 23 T T G C T T A C A A G

SEQ. ID. NO. 22 C T C T T T G T G C C C A A G A T G C G C A G G C T G A T C  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 A C C C G A G G G G A A T G G C A G T C T G A A A C G C A G  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 G A C A C C A T G A A A A C A G G A T C A T C C A C C A A C  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 A A C A A C G A G G A A G A G A A G T C C C G A C T G T T G  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 G A G A A G G A A A A C C G A G A A C T G G A A A A G A T C  
SEQ. ID. NO. 23

Figure 6g

SEQ. ID. NO. 22 A T C G C T G A G A A A G A G G A G C G C G T C T C T G A A  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 C T G C G C C A T C A G C T C C A G T C T C G G C A G C A A  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 C T C C G C T C A C G G C G C C A C C C C C C A A C A C C C  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 C C A G A T C C C T C T G G G G G C C T T C C C A G G G G A  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 C C C T C T G A G C C C C C T G A C C G G C T T A G C T G T  
SEQ. ID. NO. 23

SEQ. ID. NO. 22 G A T G G G A G T C G A G T A C A T T T G C T T T A C A A G  
SEQ. ID. NO. 23

Figure 6h

SEQ. ID. NO. 24 M L L L L L V P L F L R P L G A G G A Q T P N A T S E G C Q  
SEQ. ID. NO. 25 M G P G G P C T P V G W P L P L L L V M A A G V A P V W A S

SEQ. ID. NO. 24 I I H P P W E G G I R Y R G L T R D Q V K A I N F L P V D Y  
SEQ. ID. NO. 25 H S P H L P R P H P R V P P H P S S E R R A V Y I G A L F P

SEQ. ID. NO. 24 E I E Y V C R G E R E V V G P K V R K C L A N G S W T D M D  
SEQ. ID. NO. 25 M S G G W P G G Q A C Q P A V E M A L E D V N S R R D I L P

SEQ. ID. NO. 24 T P S R C V R I C S K S Y L T L E N G K V F L T G G D L P A  
SEQ. ID. NO. 25 D Y E L K L I H H D S K C D P G Q A T K Y L Y E L L Y N D P

SEQ. ID. NO. 24 L D G A R V E F R C D P D F H L V G S S R S V C S Q G Q W S  
SEQ. ID. NO. 25 I K I I L M P G C S S V S T L V A E A A R M W N L I V L S Y

SEQ. ID. NO. 24 T P K P H C Q V N R T P H S E R R A V Y I G A L F P M S G G  
SEQ. ID. NO. 25 G S S S P A L S N R Q R F P T F F R T H P S A T L H N P T R

SEQ. ID. NO. 24 W P G G Q A C Q P A V E M A L E D V N S R R D I L P D Y E L  
SEQ. ID. NO. 25 V K L F E K W G W K K I A T I Q Q T T E V F T S T L D D L E

SEQ. ID. NO. 24 K L I H H D S K C D P G Q A T K Y L Y E L L Y N D P I K I I  
SEQ. ID. NO. 25 E R V K E A G I E I T F R Q S F F S D P A V P V K N L K R Q

SEQ. ID. NO. 24 L M P G C S S V S T L V A E A A R M W N L I V L S Y G S S S  
SEQ. ID. NO. 25 D A R I I V G L F Y E T E A R K V F C E V Y K E R L F G K K

SEQ. ID. NO. 24 P A L S N R Q R F P T F F R T H P S A T L H N P T R V K L F  
SEQ. ID. NO. 25 Y V W F L I G W Y A D N W F K T Y D P S I N C T V E E M T E

SEQ. ID. NO. 24 E K W G W K K I A T I Q Q T T E V F T S T L D D L E E R V K  
SEQ. ID. NO. 25 A V E G H I T T E I V M L N P A N T R S I S N M T S Q E F V

SEQ. ID. NO. 24 E A G I E I T F R Q S F F S D P A V P V K N L K R Q D A R I  
SEQ. ID. NO. 25 E K L T K R L K R H P E E T G G F Q E A P L A Y D A I W A L

Figure 7a

SEQ. ID. NO. 24 IVGLFYETEARKVFC EVYKERLFGKKYVWF  
SEQ. ID. NO. 25 ALALNKTSGGGGRS GVRLEDFNYNNQTI TD

SEQ. ID. NO. 24 LIGWYADNWFKTYDPSINCTVEEMTEAVEG  
SEQ. ID. NO. 25 QIYRAMNSSSFEGVSGHVVFDASGSRMAWT

SEQ. ID. NO. 24 HITTEIVMLNPANTRSISNMTSQEFVEKLT  
SEQ. ID. NO. 25 LIEQLQGGSYKKIGYYDSTKDDLSWSKTDK

SEQ. ID. NO. 24 KRLKRHPEETGGFOEAPLAYDAIWALALAL  
SEQ. ID. NO. 25 WIGGSPPADQILVIKTFRFLSQKLFI SVSV

SEQ. ID. NO. 24 NKTSGGGGRS GVRLEDFNYNNQTI TDQIYR  
SEQ. ID. NO. 25 LSSLGIVLAVVCLS FNINSHVRYIQNSOP

SEQ. ID. NO. 24 AMNSSSFEGVSGHVVFDASGSRMAWTLIEQ  
SEQ. ID. NO. 25 NLNNLTAVGCSLALAAVFPLGLDGYHIGRS

SEQ. ID. NO. 24 LQGGSYKKIGYYDSTKDDLSWSKTDKWIGG  
SEQ. ID. NO. 25 QFPFVCQARLWLLGLGFSLGYYGSMFTK IWW

SEQ. ID. NO. 24 SPPADQILVIKTFRFLSQKLFI SVS VLSSL  
SEQ. ID. NO. 25 VHTVFTKKEEKKEWRKTLEPWKL YATVGLL

SEQ. ID. NO. 24 GIVLAVVCLS FNINSHVRYIQNSOPNLNN  
SEQ. ID. NO. 25 VGM DVLT LAIWQIVDPLHRTIETFAKEEPK

SEQ. ID. NO. 24 LTAVGCSLALAAVFPLGLDGYHIGRSQFPF  
SEQ. ID. NO. 25 EDIDVSILPQLEHCSSKKMNTWLGIIFYGYK

SEQ. ID. NO. 24 VCQARLWLLGLGFSLGYYGSMFTK IWWVHTV  
SEQ. ID. NO. 25 GLLLLGLIFLAYETKS VSTEKINDHRAVGMD

SEQ. ID. NO. 24 FTKKEEKKEWRKTLEPWKL YATVGLLVGMD  
SEQ. ID. NO. 25 A IYNVAVLCLITAPVTMILSSQQDAAFAFA

SEQ. ID. NO. 24 VLTLAIWQIVDPLHRTIETFAKEEPKEDIO  
SEQ. ID. NO. 25 SLAIVFSSYITLVVLFVPKMRRLITRGEWQ

Figure 7b

TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
SN: 09/679,664 ATTY #: (072827-1801)

SEQ. ID. NO. 24 V S I L P Q L E H C S S K K M N T W L G I F Y G Y K G L L L  
SEQ. ID. NO. 25 S E T Q D T M K T G S S T N N N E E E K S R L L E K E N R E

SEQ. ID. NO. 24 L L G I F L A Y E T K S V S T E K I N D H R A V G M A I Y N  
SEQ. ID. NO. 25 L E K I I I A E K E E R V S E L R H Q L Q S R Q Q L R S R R H

SEQ. ID. NO. 24 V A V L C L I T A P V T M I L S S Q Q D A A F A F A S L A I  
SEQ. ID. NO. 25 P P T P P D P S G G L P R G P S E P P D R L S C D G S R V H

SEQ. ID. NO. 24 V F S S Y I T L V V L F V P K M R R L I T R G E W Q S E T Q  
SEQ. ID. NO. 25 L L Y K

SEQ. ID. NO. 24 D T M K T G S S T N N N E E E K S R L L E K E N R E L E K I  
SEQ. ID. NO. 25

SEQ. ID. NO. 24 I A E K E E R V S E L R H Q L Q S R Q Q L R S R R H P P T P  
SEQ. ID. NO. 25

SEQ. ID. NO. 24 P D P S G G L P R G P S E P P D R L S C D G S R V H L L Y K  
SEQ. ID. NO. 25

Figure 7c

TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
SN: 09/679,664 ATTY #: (072827-1801)

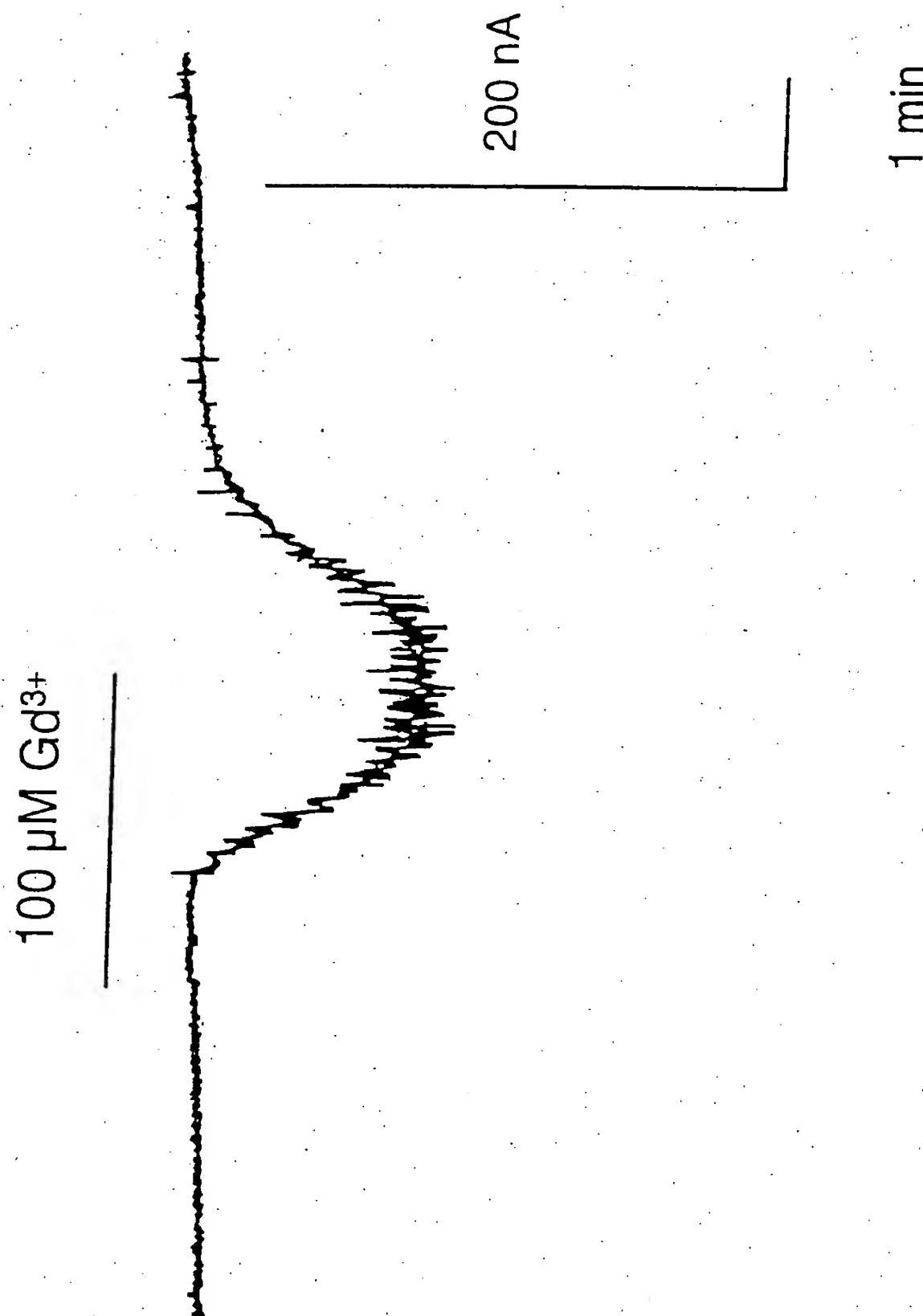


Figure 8

ClustalW Formatted Alignments

SEQ. ID. NO. 38 A T G G T A T G C G A G G G A A A G C G A T C A G  
SEQ. ID. NO. 34 A T G G G A T C G C T G C T T G C G C T C C C G G  
SEQ. ID. NO. 30 A T G G C A T T T T A T A G C T G C T G C T G G G  
SEQ. ID. NO. 26 A T G G G A T C G C T G C T T G C G C T C C T G G

SEQ. ID. NO. 38 C C T C T T G C C C T T G T T T C T T C C T C T T  
SEQ. ID. NO. 34 C A C T G C T G C T G C T G T G G G G T G C T G T  
SEQ. ID. NO. 30 T C C T C T T G G C A C T C A C C T G G C A C A C  
SEQ. ID. NO. 26 C A C T G C T G C C G C T G T G G G G T G C T G T

SEQ. ID. NO. 38 G A C C G C C A A G T T C T A C T G G A T C C T C  
SEQ. ID. NO. 34 G G C T G A G G G C C C A G C C A A G A A G G T G  
SEQ. ID. NO. 30 C T C T G C C T A C G G G C C A G A C C A G C G A  
SEQ. ID. NO. 26 G G C T G A G G G C C C A G C C A A G A A G G T G

SEQ. ID. NO. 38 A C A A T G A T G C A A A G A A C T C A C A G C C  
SEQ. ID. NO. 34 C T G A C C C T G G A G G G A G A C T T G G T G C  
SEQ. ID. NO. 30 G C C C A A A A G A A A G G G G G A C A T T A T C C  
SEQ. ID. NO. 26 C T G A C C C T G G A G G G A G A C T T G G T G C

SEQ. ID. NO. 38 A G G A G T A T G C C C A T T C C A T A C G G G T  
SEQ. ID. NO. 34 T G G G T G G G C T G T T C C C A G T G C A C C A  
SEQ. ID. NO. 30 T T G G G G G G C T C T T T C C T A T T C A T T T  
SEQ. ID. NO. 26 T G G G T G G G C T G T T C C C A G T G C A C C A

SEQ. ID. NO. 38 G G A T G G G G A C A T T A T T T T G G G G G G T  
SEQ. ID. NO. 34 G A A G G G C G G C C C A G C A G A G G A C T G T  
SEQ. ID. NO. 30 T G G A G T A G C A G C T A A A A G A T C A A G A T  
SEQ. ID. NO. 26 G A A G G G C G G C C C A G C A G A G G A C T G T

SEQ. ID. NO. 38 C T C T T C C C T G T C C A C G C A A A G G G A G  
SEQ. ID. NO. 34 G G T C C T G T C A A T G A G C A C C G T G G C A  
SEQ. ID. NO. 30 C T C A A A T C A A G G C C G G A G T C T G T G G  
SEQ. ID. NO. 26 G G T C C T G T C A A T G A G C A C C G T G G C A

SEQ. ID. NO. 38 A G A G A G G G G T G C C T T G T G G G G A G C T  
SEQ. ID. NO. 34 T C C A G C G C C T G G A G G C C A T G C T T T T  
SEQ. ID. NO. 30 A A T G T A T C A G G T A T A A T T T C C G T G G  
SEQ. ID. NO. 26 T C C A G C G C C T G G A G G C C A T G C T T T T

Figure 9a

SEQ. ID. NO. 38 G A A G A A G G A A A A G G G G A T T C A C A G A  
SEQ. ID. NO. 34 T G C A C T G G A C C G C A T C A A A C C G T G A C  
SEQ. ID. NO. 30 G T T T C G C T G G T T A C A G G C T A T G A T A  
SEQ. ID. NO. 26 T G C A C T G G A C C G C A T C A A A C C G T G A C

SEQ. ID. NO. 38 C T G G A G G C C A T G C T T T A T G C A A T T G  
SEQ. ID. NO. 34 C C G C A C C T G C T G C C T G G C G T G C G C C  
SEQ. ID. NO. 30 T T T G C C A T A G A G G A G A T A A A C A G C A  
SEQ. ID. NO. 26 C C G C A C C T G C T G C C T G G C G T G C G C C

SEQ. ID. NO. 38 A C C A G A T T A A C A A G G A C C C T G A T C T  
SEQ. ID. NO. 34 T G G G T G C A C A C A T C C C T C G A C A G T T G  
SEQ. ID. NO. 30 G C C C A G C C C T T C T T C C C A A C T T G A C  
SEQ. ID. NO. 26 T G G G T G C A C A C A T C C C T C G A C A G T T G

SEQ. ID. NO. 38 C C T T T C C A A C A T C A C T C T G G G T G T C  
SEQ. ID. NO. 34 C T C C A A G G A C A C A C A T G C G C T G G A G  
SEQ. ID. NO. 30 G C T G G G A T A C A G G A T A T T T G A C A C T  
SEQ. ID. NO. 26 C T C C A A G G A C A C A C A T G C G C T G G A G

SEQ. ID. NO. 38 C G C A T C C C T C G A C A C G T G C T C T A G G G  
SEQ. ID. NO. 34 C A G G C A C T G G A C T T T G T G C G T G C C T  
SEQ. ID. NO. 30 T G C A A C A C C G T T T C T A A G G C C T T G G  
SEQ. ID. NO. 26 C A G G C A C T G G A C T T T G T G C G T G C C T

SEQ. ID. NO. 38 A C A C C T A T G C T T T G G A G C A G T C T C T  
SEQ. ID. NO. 34 C A C T C A G C C G T G G T G C T G A T G G C T C  
SEQ. ID. NO. 30 A A G C C A C C C T G A G T T T G T T G C T C A  
SEQ. ID. NO. 26 C A C T C A G C C G T G G T G C T G A T G G A T C

SEQ. ID. NO. 38 A A C A T T C G T G C A G G C A T T A A T A G A G  
SEQ. ID. NO. 34 A C G C C A C A T C T G C C C C G A C G G C T C T  
SEQ. ID. NO. 30 A A A C A A A A A T T G A T T C T T T G A A C C T T  
SEQ. ID. NO. 26 A C G C C A C A T C T G C C C C G A C G G C T C T

SEQ. ID. NO. 38 A A A G A T G C T T C G G A T G T G A A G T G T G  
SEQ. ID. NO. 34 T A T G C G A C C C A T G G T G A T G C T C C C A  
SEQ. ID. NO. 30 G A T G A G T T C T G C A A C T G C T C A G A G C  
SEQ. ID. NO. 26 T A T G C G A C C C A T G G T G A T G C T C C C A

Figure 9b

SEQ. ID. NO. 38 C T A A T G G A G A T C C A C C C A T T T C A C  
SEQ. ID. NO. 34 C T G C C A T C A C T G G T G T T A T T G G C G G  
SEQ. ID. NO. 30 A C A T T C C C T C T A C G A T T G C T G T G G T  
SEQ. ID. NO. 26 C T G C C A T C A C T G G T G T T A T T G G C G G

SEQ. ID. NO. 38 C A A G C C C G A C A A G A T T T C T G G C G T C  
SEQ. ID. NO. 34 T T C C T A C A G T G A T G T C T C C A T C C A G  
SEQ. ID. NO. 30 G G G A G C A A C T G G C T C A G G C G T C T C C  
SEQ. ID. NO. 26 T T C C T A C A G T G A T G T C T C C A T C C A G

SEQ. ID. NO. 38 A T A G G T G C T G C A G C A A G C T C C G T G T  
SEQ. ID. NO. 34 G T G G C C A A C C T C T T G A G G C T A T T T C  
SEQ. ID. NO. 30 A C G G C A G T G G C A A A T C T G C T G G G G C  
SEQ. ID. NO. 26 G T G G C C A A C C T C T T G A G G C T A T T T C

SEQ. ID. NO. 38 C C A T C A T G G T T G C T A A C A T T T T A A G  
SEQ. ID. NO. 34 A G A T C C C A C A G A T T A G C T A C G C C T C  
SEQ. ID. NO. 30 T C T T C T A C A T T C C C C A G G T C A G T T A  
SEQ. ID. NO. 26 A G A T C C C A C A G A T T A G C T A C G C C T C

SEQ. ID. NO. 38 A C T T T T T A A G A T A C C T C A A A T C A G C  
SEQ. ID. NO. 34 T A C C A G T G C C A A G C T G A G T G A C A A G  
SEQ. ID. NO. 30 T G C C T C C T C C A G C A G A C T C C T C A G C  
SEQ. ID. NO. 26 T A C C A G T G C C A A G C T G A G T G A C A A G

SEQ. ID. NO. 38 T A T G C A T C C A C A G C C C C A G A G C T A A  
SEQ. ID. NO. 34 T C C C G C T A T G A C T A C T T T G C C C G C A  
SEQ. ID. NO. 30 A A C A A G A A T C A A T T C A A G T C T T T C C  
SEQ. ID. NO. 26 T C C C G C T A T G A C T A C T T T G C C C G C A

SEQ. ID. NO. 38 G T G A T A A C A C C A G G T A T G A C T T T T  
SEQ. ID. NO. 34 C A G T G C C T C C T G A C T T C T T C C A A G C  
SEQ. ID. NO. 30 T C C G A A C C A T C C C G C A A T G A T G A G C A  
SEQ. ID. NO. 26 C A G T G C C T C C T G A C T T C T T C C A A G C

SEQ. ID. NO. 38 C T C T C G A G T G G T T C C G C C T G A C T C C  
SEQ. ID. NO. 34 C A A G G C C A T G G C T G A G A T T C T C C G C  
SEQ. ID. NO. 30 C C A G G C C A C T G C C A T G G C A G A C A T C  
SEQ. ID. NO. 26 C A A G G C C A T G G C T G A G A T T C T C C G C

Figure 9c

SEQ. ID. NO. 38 T A C C A A G C C C A A G C C A T G G T G G A C A  
SEQ. ID. NO. 34 T T C T T C A A C T G G A C C T A T G T G T C C A  
SEQ. ID. NO. 30 A T C G A G T A T T T C C G C T G G A A C T G G G  
SEQ. ID. NO. 26 T T C T T C A A C T G G A C C T A T G T G T C C A

SEQ. ID. NO. 38 T C G T G A C A G C A C T G G G A T G G A A T T A  
SEQ. ID. NO. 34 C T G T G G C G T C T G A G G G C G A C T A T G G  
SEQ. ID. NO. 30 T G G G C A C A A T T G C A G C T G A T G A C G A  
SEQ. ID. NO. 26 C T G A G G C C T C T G A G G G C G A C T A T G G

SEQ. ID. NO. 38 T G T T T C G A C A C T G G C T T C T G A G G G G  
SEQ. ID. NO. 34 C G A G A C A G G C A T T G A G G C C T T T G A G  
SEQ. ID. NO. 30 C T A T G G G C G G C C G G G G A T T G A G A A A  
SEQ. ID. NO. 26 C G A G A C A G G C A T T G A G G C C T T T G A G

SEQ. ID. NO. 38 A A C T A T G G T G A G A G C G G T G T G G A G G  
SEQ. ID. NO. 34 C T A G A G G G C T C G T G C C C G C A A C A T C T  
SEQ. ID. NO. 30 T T C C G A G A G G A A G C T G A G G A A A A G G G  
SEQ. ID. NO. 26 C T A G A G G G C T C G T G C C C G C A A C A T C T

SEQ. ID. NO. 38 C C T T C A C C C A G A T C T C G A G G G A G A T  
SEQ. ID. NO. 34 G T G T G G C C A C C T C G G A G A A A G T G G G  
SEQ. ID. NO. 30 A T A T C T G C A T C G A C T T C A G T G A A C T  
SEQ. ID. NO. 26 G T G T G G C C A C C T C G G A G A A A G T G G G

SEQ. ID. NO. 38 T G G T G G T G T T T G C A T T G C T C A G T C A  
SEQ. ID. NO. 34 C C G T G C C A T G A G G C C G C G C G G C C T T T  
SEQ. ID. NO. 30 C A T C T C C C A G T A C T C T G A T G A G G A A  
SEQ. ID. NO. 26 C C G T G C C A T G A G G C C G C G C G G C C T T T

SEQ. ID. NO. 38 C A G A A A A T C C C A C G T G A A C C A A G A C  
SEQ. ID. NO. 34 G A G G G T G T G G T G C G A G C C C T G C T G C  
SEQ. ID. NO. 30 G A G A T C C A G C A T G T G G T A G A G G T G A  
SEQ. ID. NO. 26 G A G G O T G T G G T G C G A G C C C T G C T G C

SEQ. ID. NO. 38 C T G G A G A A T T T G A A A A A A A T T A T C A A  
SEQ. ID. NO. 34 A G A A G C C C A G T G C C C G C G T G G C T G T  
SEQ. ID. NO. 30 T T C A A A A A T T C C A C G G C C A A A G T C A T  
SEQ. ID. NO. 26 A G A A G C C C A G T G C C C G C G T G G C T G T

Figure 9d

SEQ. ID. NO. 38 A C G C C T G C T A G A A A C A C C T A A T G C T  
SEQ. ID. NO. 34 C C T G T T C A C C C G T T C T G A G G A T G C C  
SEQ. ID. NO. 30 C G T G G T T T C T C C A G T G G C C C A G A T  
SEQ. ID. NO. 26 C C T G T T C A C C C G T T C T G A G G A T G C C

SEQ. ID. NO. 38 C G A G C A G T G A T T A T G T T T G C C A A T G  
SEQ. ID. NO. 34 C G G G A G C T G C T T G C T G C C A G C C A G C  
SEQ. ID. NO. 30 C T T G A G C C C C T C A T C A A G G A G A T T G  
SEQ. ID. NO. 26 C G G G A G C T G C T T G C T G C C A G C C A G C

SEQ. ID. NO. 38 A G G A T G A C A T C A G G A G G A T A T T G G A  
SEQ. ID. NO. 34 G C C T C A A T G C C A G C T T C A C C T G G G T  
SEQ. ID. NO. 30 T C C G G C G C A A T A T C A C G G G C A A G A T  
SEQ. ID. NO. 26 G C C T C A A T G C C A G C T T C A C C T G G G T

SEQ. ID. NO. 38 A G C A G C A A A A A A A C T A A A C C A A A G T  
SEQ. ID. NO. 34 G G C C A G T G A T G G T T G G G G G G C C C T G  
SEQ. ID. NO. 30 C T G G C T G G C C A G C G A G G C C T G G G C C  
SEQ. ID. NO. 26 G G C C A G T G A T G G T T G G G G G G C C C T G

SEQ. ID. NO. 38 G G G C A T T T C T C T G G A T T G G C T C A G  
SEQ. ID. NO. 34 G A G A G T G T G G T G G C A G G C A G T G A G G  
SEQ. ID. NO. 30 A G C T C C T C C C T G A T C G C C A T G C C T C  
SEQ. ID. NO. 26 G A G A G T G T G G T G G C A G G C A G T G A G G

SEQ. ID. NO. 38 A T A G T T G G G G A T C C A A A A T A G C A C C  
SEQ. ID. NO. 34 G G G C T G C T G A G G G T G C T A T C A C C A T  
SEQ. ID. NO. 30 A G T A C T T C C A C G T G G T T G G G G G C A C  
SEQ. ID. NO. 26 G G G C T G C T G A G G G T G C T A T C A C C A T

SEQ. ID. NO. 38 T G T C T A T C A G C A A G A G G A G A T T G C A  
SEQ. ID. NO. 34 C G A G C T G G C C T C C T A C C C C A T C A G T  
SEQ. ID. NO. 30 C A T T G G A T T C G C T C T G A A A G G C T G G G  
SEQ. ID. NO. 26 C G A G C T G G C C T C C T A C C C C A T C A G T

SEQ. ID. NO. 38 G A A G G G G C T G T G A C A A T T T G C C C A  
SEQ. ID. NO. 34 G A C T T T G C C T C C T A C T T C C A G A G G C C  
SEQ. ID. NO. 30 C A G A T C C C A G G C T T C C G G G A A T T C C  
SEQ. ID. NO. 26 G A C T T T G C C T C C T A C T T C C A G A G G C C

Figure 9e

SEQ. ID. NO. 38 AACGGAGCATCAATTGATGGATTTGA  
SEQ. ID. NO. 34 TGGACCCCTTGGAAACAACAGCCGGAA  
SEQ. ID. NO. 30 TGAAGAAGGTCCATCCCCAGGAAGTC  
SEQ. ID. NO. 26 TGGACCCCTTGGAAACAACAGCCGGAA

SEQ. ID. NO. 38 TCGATACTTTAGAACCCGAACCTCTT  
SEQ. ID. NO. 34 CCCCTGGTTCCGTGAATTCTGGGAG  
SEQ. ID. NO. 30 TGTCCACAAATGGTTTGCACAGGAG  
SEQ. ID. NO. 26 CCCCTGGTTCCGTGAATTCTGGGAG

SEQ. ID. NO. 38 GCCAATAATCGAAGAAATGTGTGGT  
SEQ. ID. NO. 34 CAGAGGTTCCGCTGCAGCTTCCGGC  
SEQ. ID. NO. 30 TTTGGGAAGAAACATTAACTGCC  
SEQ. ID. NO. 26 CAGAGGTTCCGCTGCAGCTTCCGGC

SEQ. ID. NO. 38 TTGCAAGAATTCTGGGAGGAGAATT  
SEQ. ID. NO. 34 AGCGAGACTGCGCAGCACCCTCTCT  
SEQ. ID. NO. 30 ACCTCCAAGAAGGTGCAAAAGGACC  
SEQ. ID. NO. 26 AGCGAGACTGCGCAGCACCCTCTCT

SEQ. ID. NO. 38 TGGCTGCAAGTTAGGATCACATGGG  
SEQ. ID. NO. 34 CCGGGCTGTGCCCTTGAAGCAGGAG  
SEQ. ID. NO. 30 TTTACCTGTGGACACCTTTCTGAGA  
SEQ. ID. NO. 26 CCGGGCTGTGCCCTTGAACAGGAG

SEQ. ID. NO. 38 AAAAGGAACAGTCATAATAAGAAAT  
SEQ. ID. NO. 34 TCCAAGATCATGTTGTGGTCAATG  
SEQ. ID. NO. 30 GTCAACGAAAGAAAGTGGCGACAGGT  
SEQ. ID. NO. 26 TCCAAGATCATGTTGTGGTCAATG

SEQ. ID. NO. 38 GCACAGGGCTGGAGCGAATTGCTCG  
SEQ. ID. NO. 34 CAGTGTACGCCATGGCCATGCGCT  
SEQ. ID. NO. 30 TTAGCAACAGCTCGACAGCCTTCCG  
SEQ. ID. NO. 26 CAGTGTACGCCATGGCCATGCGCT

SEQ. ID. NO. 38 GGATTCACTTATGAACAGGAAGGA  
SEQ. ID. NO. 34 CCACAAACATGCACCGTGCCTCTGC  
SEQ. ID. NO. 30 ACCCCCTCTGTACAGGGGATGAGAAC  
SEQ. ID. NO. 26 CCACAAACATGCACCGTGCCTCTGC

Figure 9f

SEQ. ID. NO. 38 A A G G T C C A A T T T G T A A T T G A T G C T G  
SEQ. ID. NO. 34 C C C A A C A C C A C C C G G C T C T G T G A C G  
SEQ. ID. NO. 30 A T C A G C A G T G T C G A G A C C C C T T A C A  
SEQ. ID. NO. 26 C C C A A C A C C A C C C G G C T C T G T G A C G

SEQ. ID. NO. 38 T A T A T T C C A T G G C T T A C G C C C T G C A  
SEQ. ID. NO. 34 C G A T G C G G G C C A G T T A A C G G G G C G C C G  
SEQ. ID. NO. 30 T A G A T T A C A C A C G C A T T A C G G A T A T C  
SEQ. ID. NO. 26 C G A T G C G G G C C A G T T A A C G G G G C G C C G

SEQ. ID. NO. 38 C A A T A T G C A C A A A G A T C T C T G C C C T  
SEQ. ID. NO. 34 C C T C T A C A A G G A C T T T G T G C T C A A C  
SEQ. ID. NO. 30 C T A C A A T G T G T A C T T A G C A G T C T A C  
SEQ. ID. NO. 26 C C T C T A C A A G G A C T T T G T G C T C A A C

SEQ. ID. NO. 38 G G A T A C A T T G G C C T T T G T C C A C G A A  
SEQ. ID. NO. 34 G T C A A G T T T G A T G C C C C C T T T C G C C  
SEQ. ID. NO. 30 T C C A T T G C C C A C G C C T T G C A A G A T A  
SEQ. ID. NO. 26 G T C A A G T T T G A T G C C C C C T T T C G C C

SEQ. ID. NO. 38 T G A G T A C C A T T G A T G G G A A A G A G C T  
SEQ. ID. NO. 34 C A G C T G A C A C C C A C A A T G A G G T C C G  
SEQ. ID. NO. 30 T A T A T A C C T G C T T A C C T G G G A G A G G  
SEQ. ID. NO. 26 C A G C T G A C A C C C A C A A T G A G G T C C G

SEQ. ID. NO. 38 A C T T G G T T A T A T T C G G G C T G T A A A T  
SEQ. ID. NO. 34 C T T T G A C C G C T T T G G T G A T G G T A T T  
SEQ. ID. NO. 30 G C T C T T C A C C A A T G G C T C C T G T G C A  
SEQ. ID. NO. 26 C T T T G A C C G C T T T G G T G A T G G T A T T

SEQ. ID. NO. 38 T T T A A T G G C A G T G C T G G C A C T C C T G  
SEQ. ID. NO. 34 G G C C G C T A C A A C A T C T T C A C C T A T C  
SEQ. ID. NO. 30 G A C A T C A A G A A A G T T G A G G G C G T G G C  
SEQ. ID. NO. 26 G G C C G C T A C A A C A T C T T C A C C T A T C

SEQ. ID. NO. 38 T C A C T T T A A T G A A A A C G G A G A T G C  
SEQ. ID. NO. 34 T G C G T G C A G G C A G T G G G G G C T A T C G  
SEQ. ID. NO. 30 A G G T C C T G A A A G C A C C T A C G G C A T C T  
SEQ. ID. NO. 26 T G C G T G C A G G C A G T G G G G G C T A T C G

Figure 9g

SEQ. ID. NO. 38 T C C T G G A C G T T A T G A T A T C T T C C A G  
SEQ. ID. NO. 34 C T A C C A G A A G G T G G G C T A C T G G G C A  
SEQ. ID. NO. 30 A A A C T T T A C A A A C A A T A T G G G G G A G  
SEQ. ID. NO. 26 C T A C C A G A A G G T G G G C T A C T G G G C A

SEQ. ID. NO. 38 T A T C A A A T A A C C A A C A A A A G C A C A G  
SEQ. ID. NO. 34 G A A G G C T T G A C T C T G G A C A C C A G C C  
SEQ. ID. NO. 30 C A G G T G A C C T T T G A T G A G T G T G G T G  
SEQ. ID. NO. 26 G A A G G C T T G A C T C T G G A C A C C A G C C

SEQ. ID. NO. 38 A G T A C A A A G T C A T C G G G C A C T G G A C  
SEQ. ID. NO. 34 T C A T C C C A T G G G C C T C A C C C T C A G G C  
SEQ. ID. NO. 30 A C C T G G T G G G G A A C T A T T C C A T C A T  
SEQ. ID. NO. 26 T C A T C C C A T G G G C C T C A C C G T C A G G C

SEQ. ID. NO. 38 C A A T C A G C T T C A T C T A A A A G T G G A A  
SEQ. ID. NO. 34 C G G C C C C C T G G C C C G C C T C T C G C T G C  
SEQ. ID. NO. 30 C A A C T G G C A C C T C T C C C C A G A G G G A T  
SEQ. ID. NO. 26 C G G C C C C T G G C C G C C T C T C G C T G C

SEQ. ID. NO. 38 G A C A T G C A G T G G G C T C A T A G A G A A C  
SEQ. ID. NO. 34 A G T G A G G C C C T G C C T C C A G A A T G A G G  
SEQ. ID. NO. 30 G G C T C C A T C G T G T T T A A G G A A G T C G  
SEQ. ID. NO. 26 A G T G A G G C C C T G C C T C C A G A A T G A G G

SEQ. ID. NO. 38 A T A C T C A C C C G G C G T C T G T C T G C A G  
SEQ. ID. NO. 34 T G A A G A G A G T G T G C A G C C G G G G G A A G T  
SEQ. ID. NO. 30 G G T A T T A C A A A C G T C T A T G C C A A G A A  
SEQ. ID. NO. 26 T G A A G A G A G T G T G C A G C C G G G G G A A G T

SEQ. ID. NO. 38 C C T G C C G T G T A A G C C A G G G G A G A G G  
SEQ. ID. NO. 34 C T G C T G C T G G C T C T G C A T T C C G T G C  
SEQ. ID. NO. 30 G G G A G A A A G A C T C T T C A T C A A C G A G  
SEQ. ID. NO. 26 C T G C T G C T G G C T C T G C A T T C C G T G C

SEQ. ID. NO. 38 A A G A A A A C G G T G A A A G G G G T C C C T T  
SEQ. ID. NO. 34 C A G C C C T A T G A G T A C C G A T T G G A C G  
SEQ. ID. NO. 30 G A G A A A A T C C T G T G G A G T G G G T T C T  
SEQ. ID. NO. 26 C A G C C C T A T G A G T A C C G A T T G G A C G

Figure 9h

SEQ. ID. NO. 38 G C T G C T G G C A C T G T G A A C G C T G T G A  
SEQ. ID. NO. 34 A A T T C A C T T G C G C T G A T T G T G G C C T  
SEQ. ID. NO. 30 C C A G G G A G G T G C C C T T C T C C A A C T G  
SEQ. ID. NO. 26 A A T T C A C T T G C G C T G A T T G T G G C C T

SEQ. ID. NO. 38 A G G T T A C A A A C T A C C A G G T G G A T G A G  
SEQ. ID. NO. 34 G G G C T A C T G G C C C A A T G C C A G C C T G  
SEQ. ID. NO. 30 C A G C C G A G A C T G C C T G G C A G G G A C C  
SEQ. ID. NO. 26 G G G C T A C T G G C C C A A T G C C A G C C T G

SEQ. ID. NO. 38 C T G T C C T G T G A A C T T T G C C C T C T G G  
SEQ. ID. NO. 34 A C T G G C T G C T T C G A A C T G C C C C A G G  
SEQ. ID. NO. 30 A G G A A A G G G A T C A T T G A G G G G A G C  
SEQ. ID. NO. 26 A C T G G C T G C T T C G A A C T G C C C C A G G

SEQ. ID. NO. 38 A T C A G A G A C C C A A C A T G A A C C G C A C  
SEQ. ID. NO. 34 A G T A C A T C C G C T G G G G C A T G C C T G  
SEQ. ID. NO. 30 C C A C C T G C T G C T T G A G T G T G T G G A  
SEQ. ID. NO. 26 A G T A C A T C C G C T G G G G C A T G C C T G

SEQ. ID. NO. 38 A G G C T G C C A G C T T A T C C C C A T C A T C  
SEQ. ID. NO. 34 G G C T G T G G G A C C T G T C A C C A T C G C C  
SEQ. ID. NO. 30 G T G T C C T G A T G G G G A G T A T A G T G A T  
SEQ. ID. NO. 26 G G C T G T G G G A C C T G T C A C C A T C G C C

SEQ. ID. NO. 38 A A A T T G G A G T G G C A T T C T C C C T G G G  
SEQ. ID. NO. 34 T G C C T C G G T G C C C T G G C C A C C C T C T  
SEQ. ID. NO. 30 G A G A C A G A T G C C A G T G C C T G T A A C A  
SEQ. ID. NO. 26 T G C C T C G G T G C C C T G G C C A C C C T G T

SEQ. ID. NO. 38 C T G T G G T G C C T G T G T T T G T T G C A A T  
SEQ. ID. NO. 34 T T G T G C T G G G T G T C T T T G T G C G G C A  
SEQ. ID. NO. 30 A G T G C C C A G A T G A C T T C T G G T C C A A  
SEQ. ID. NO. 26 T T G T G C T G G G T G T C T T T G T G C G G C A

SEQ. ID. NO. 38 A T T G G G A A T C A T C G C C A C C A C C T T T  
SEQ. ID. NO. 34 C A A T G C C A C A C C A G T G G T C A A G G C C  
SEQ. ID. NO. 30 T G A G A A C C A C A C C T C C T G C T T C G A A  
SEQ. ID. NO. 26 C A A T G C C A C A C C A G T G G T C A A G G C C

Figure 9i

SEQ. ID. NO. 38 G T G A T C G T G A C C T T T G T C C G C T A T A  
SEQ. ID. NO. 34 T C A G G T C G G G A G C T C T G C T A C A T C C  
SEQ. ID. NO. 30 C T G C C C C A G G A G T A C A T C C G C T G G G  
SEQ. ID. NO. 26 T C A G G T C G G G A G C T C T G C T A C A T C C

SEQ. ID. NO. 38 A T G A C A C A C C T A T C G T G A G G G C T T C  
SEQ. ID. NO. 34 T G C T G G G T G G T G T C T T C C T C T G C T A  
SEQ. ID. NO. 30 G C G A T G C C T G G G C T G T G G G A C C T G T  
SEQ. ID. NO. 26 T G C T G G G T G G T G T C T T C C T C T G C T A

SEQ. ID. NO. 38 A G G A C G G C G A A C T T A G T T A C G T G C T C  
SEQ. ID. NO. 34 C T G C A T G A C C T T C A T C T T C A T T G C C  
SEQ. ID. NO. 30 C A C C A T C G C C T G C C T C G G T G C C C T G  
SEQ. ID. NO. 26 C T G C A T G A C C T T C A T C T T C A T T G C C

SEQ. ID. NO. 38 C T A A C G G G G A T T T T C T C T G T T A T T  
SEQ. ID. NO. 34 A A G C C A T C C A C G G C A G T G T G T A C C T  
SEQ. ID. NO. 30 G C C A C C C T G T T T G T G C T G G G T G T C T  
SEQ. ID. NO. 26 A A G C C A T C C A C G G C A G T G T G T A C C T

SEQ. ID. NO. 38 C A A T C A C G T T T T A A T G A T T G C A G C  
SEQ. ID. NO. 34 T A C G G G C G T C T T G G T T T G G G C A C T G C  
SEQ. ID. NO. 30 T T G T G C G G C A C A A T G C C A C A C C A G T  
SEQ. ID. NO. 26 T A C G G G C G T C T T G G T T T G G G C A C T G C

SEQ. ID. NO. 38 A C C A G A T A C A A T C A T A T G C T C C T T C  
SEQ. ID. NO. 34 C T T C T C T G T C T G C T A C T C A G C C C T G  
SEQ. ID. NO. 30 G G T C A A G G C C T C A G G T C G G G A G C T C  
SEQ. ID. NO. 26 C T T C T C T G T C T G C T A C T C A G C C C T G

SEQ. ID. NO. 38 C G A C G G G T C T T C C T A G G A C T T G G C A  
SEQ. ID. NO. 34 C T C A C C A A G A C C A A C C G C A T T G C A C  
SEQ. ID. NO. 30 T G C T A C A T C C T G C T G G G T G G T G T C T  
SEQ. ID. NO. 26 C T C A C C A A G A C C A A C C G C A T T G C A C

SEQ. ID. NO. 38 T G T G T T T C A G C T A T G C A G C C C T T C T  
SEQ. ID. NO. 34 G C A T C T T C G G T G G G G C C C G G G A G G G  
SEQ. ID. NO. 30 T C C T C T G C T A C T G C A T G A C C T T C A T  
SEQ. ID. NO. 26 G C A T C T T C G G T G G G G C C C G G G A G G G

Figure 9j

SEQ. ID. NO. 38 GACCAAAACAAACCGTATCCACCGA  
SEQ. ID. NO. 34 TGCCCAGCGGGCCACGCTTCATCAGT  
SEQ. ID. NO. 30 CTTCATTGCCAAAGCCATCCACGGCA  
SEQ. ID. NO. 26 TGCCCAGCGGGCCACGCTTCATCAGT

SEQ. ID. NO. 38 ATATTTGAGCAGGGGAAGAAAATCTG  
SEQ. ID. NO. 34 CCTGCCCTCACAGGTGGCCATCTGCC  
SEQ. ID. NO. 30 GTGTGTACCTTACGGCGTCTTGGTT  
SEQ. ID. NO. 26 CCTGCCCTCACAGGTGGCCATCTGCC

SEQ. ID. NO. 38 TCACAGCGCCCAAGTTCAATTAGTCC  
SEQ. ID. NO. 34 TGGCACTTATCTCGGGCCAGCTGCT  
SEQ. ID. NO. 30 TGGGCACTGCCCTTCCTCTGTCTGCTA  
SEQ. ID. NO. 26 TGGCACTTATCTCGGGCCAGCTGCT

SEQ. ID. NO. 38 AGCATCTCAGCTGGTGATCACCTTC  
SEQ. ID. NO. 34 CATCGTGGTCGCCCTGGCTGGTGGTG  
SEQ. ID. NO. 30 CTCAGCCCTGCTCACCAAGACCAAC  
SEQ. ID. NO. 26 CATCGTGGTCGCCCTGGCTGGTGGTG

SEQ. ID. NO. 38 AGCCTCATCTCCGTCCAGCTCCATTG  
SEQ. ID. NO. 34 GAGGCACCGGGCACAGGCAAGGAGA  
SEQ. ID. NO. 30 CGCATTGCAACGCATCTTCGGTGGGG  
SEQ. ID. NO. 26 GAGGCACCGGGCACAGGCAAGGAGA

SEQ. ID. NO. 38 GAGTGTCTGGTTTGTGGTGG  
SEQ. ID. NO. 34 CAGCCCCCGAACCGGGGGAGGTGGT  
SEQ. ID. NO. 30 CCCGGGAGGGTGCCCAAGCGGGCACG  
SEQ. ID. NO. 26 CAGCCCCCGAACCGGGGGAGGTGGT

SEQ. ID. NO. 38 TCCCCCCCCACATCATCATGACTAT  
SEQ. ID. NO. 34 GACACTGCGCTGCAACCAACCGCGAT  
SEQ. ID. NO. 30 CTTCATCAGTCCTGCCCTCACAGGTG  
SEQ. ID. NO. 26 GACACTGCGCTGCAACCAACCGCGAT

SEQ. ID. NO. 38 GGAGAGCAGCGGACACTAGATCCAG  
SEQ. ID. NO. 34 GCAAGTATGTTGGGCTCGCTGGCCT  
SEQ. ID. NO. 30 GCCATCTGCCCTGGCACTTATCTCGG  
SEQ. ID. NO. 26 GCAAGTATGTTGGGCTCGCTGGCCT

Figure 9k

SEQ. ID. NO. 38 A G A A G G C C A G G G G A G T G C T C A A G T G  
SEQ. ID. NO. 34 A C A A T G T G C T C C C T C A T C G C G C T C T G  
SEQ. ID. NO. 30 G C C A G C T G C T C A T C G T G G T C G C C T G  
SEQ. ID. NO. 26 A C A A T G T G C T C C C T C A T C G C G C T C T G

SEQ. ID. NO. 38 T G A C A T T T C T G A T C T C T C A C T C A T T  
SEQ. ID. NO. 34 C A C G C T T T A T G C C T T C A A G A C T C G C  
SEQ. ID. NO. 30 G C T G G T G G T G G A G G C A C C G G G C A C A  
SEQ. ID. NO. 26 C A C G C T T T A T G C C T T C A A T A C T C G C

SEQ. ID. NO. 38 T G T T C A C T T G G A T A C A G T A T C C T C T  
SEQ. ID. NO. 34 A A G T G C C C C G A A A A C T T C A A C G A G G  
SEQ. ID. NO. 30 G G C A A G G A G A C A G C C C C C G A A C G G C  
SEQ. ID. NO. 26 A A G T G C C C C G A A A A C T T C A A C G A G G

SEQ. ID. NO. 38 T G A T G G T C A C T T G T A C T G T T T A T G C  
SEQ. ID. NO. 34 C C A A G T T C A T T G G C T T C A C C A T G T A  
SEQ. ID. NO. 30 G G G A G G T G G T G A C A C T G C G C T G C A A  
SEQ. ID. NO. 26 C C A A G T T C A T T G G C T T C A C C A T G T A

SEQ. ID. NO. 38 C A T T A A A A C G A G A G G G T G T C C C A G A G  
SEQ. ID. NO. 34 C A C C A C C T G C A T C A T C T G G C T G G C A  
SEQ. ID. NO. 30 C C A C C G G C G A T G C A A G T A T G T T G G G C  
SEQ. ID. NO. 26 C A C C A C C T G C A T C A T C T G G C T G G C A

SEQ. ID. NO. 38 A C T T T C A A T G A A G C C A A A C C T A T T G  
SEQ. ID. NO. 34 T T C C T G C C C A T C T T C T A T G T C A C C T  
SEQ. ID. NO. 30 T C G C T G G C C T A C A A T G T G C T C C C T C A  
SEQ. ID. NO. 26 T T G T T G C C C A T C T T C T A T G T C A C C T

SEQ. ID. NO. 38 G A T T T A C C A T G T A T A C C A C C T G C A T  
SEQ. ID. NO. 34 C C A G T G A C T A C C G G G T A C A G A C C A C  
SEQ. ID. NO. 30 T C G C G C T C T G C A C G C T T T A T G C C T T  
SEQ. ID. NO. 26 C C A G T G A C T A C C G G G T A C A G A C C A C

SEQ. ID. NO. 38 C A T T T G G T T A G C T T T C A T C C C C A T C  
SEQ. ID. NO. 34 C A C C A T G T G C G T G T C A G T C A G C C T C  
SEQ. ID. NO. 30 C A A T A C T C G C A A G T G C C C C G A A A A C  
SEQ. ID. NO. 26 C A C C A T G T G C G T G T C A G T C A G C C T C

Figure 91

SEQ. ID. NO. 38 T T T T T G G T A C A G C C C A G T C A G C A G  
SEQ. ID. NO. 34 A G C G G C T C C G T G G T G C T T G G C T G C C  
SEQ. ID. NO. 30 T T C A A C G A G G C C A A G T T C A T T G G C T  
SEQ. ID. NO. 26 A G C G G C T C C G T G G T G C T T G G C T G C C

SEQ. ID. NO. 38 A A A A G A T G T A C A T C C A G A C A A C A A C  
SEQ. ID. NO. 34 T C T T T G C G C C C A A G C T G C A C A T C A T  
SEQ. ID. NO. 30 T C A C C A T G T A C A C C A C C A C T G C A T C A T  
SEQ. ID. NO. 26 T C T T T G C G C C C A A G C T G C A C A T C A T

SEQ. ID. NO. 38 A C T T A C T G T C T C C A T G A G T T T A A G T  
SEQ. ID. NO. 34 C C T C T T C C A G C C G C A G A A G A A C A C C  
SEQ. ID. NO. 30 C T G G C T G G C A T T G T T G C C C A T C T T C  
SEQ. ID. NO. 26 C C T C T T C C A G C C G C A G A A G A A C G T G

SEQ. ID. NO. 38 G C T T C A G T A T C T C T G G G C A T G C T C T  
SEQ. ID. NO. 34 A T C G A G G A G G T G C G T T G C A G C A C C G  
SEQ. ID. NO. 30 T A T G T C A C C T C C A G T G A C T A C C G G G  
SEQ. ID. NO. 26 G T T A G C C A C C G G G C A C C A C C A G C C

SEQ. ID. NO. 38 A T A T G C C C A A G G T T T A T A T T A T A A T  
SEQ. ID. NO. 34 C A G C T C A C G C T T T C A A G G T G G C T G C  
SEQ. ID. NO. 30 T A C A G A C C A C C A C C A T G T G C G T G T C  
SEQ. ID. NO. 26 G C T T T G G C A G T G C T G C T G C C A G G G C

SEQ. ID. NO. 38 T T T T C A T C C A G A A C A G A A T A C C A T C  
SEQ. ID. NO. 34 C C G G G C C A C G C T G C G C C G C A G C A A C  
SEQ. ID. NO. 30 A G T C A G C C T C A G C G G C T C C G T G G T G  
SEQ. ID. NO. 26 C A G C T C C A G C C T T G G C C A A G G G T C T

SEQ. ID. NO. 38 G A G G A G G T G C G T T G C A G C A C C G C A G  
SEQ. ID. NO. 34 G T C T C C C G C A A G C G G T C C A G G C A G C C  
SEQ. ID. NO. 30 C T T G G C T G C C T C T T G C G C C C A A G C  
SEQ. ID. NO. 26 G G C T C C C A G T T T G T C C C C A C T G T T T

SEQ. ID. NO. 38 C T C A C G C T T T C A A G G T G G C T G C C C G  
SEQ. ID. NO. 34 T T G G A G G G C T C C A C G G G A T C C A C C C C  
SEQ. ID. NO. 30 T G C A C A T C A T C C T C T T C C A G C C G C A  
SEQ. ID. NO. 26 G C A A T G G C C G T G A G G T G G T G G A C T C

Figure 9m

SEQ. ID. NO. 38 G G C C A C G C T G C G C C G C A G C A A C G T C  
SEQ. ID. NO. 34 C T C C T C C T C C A T C A G C A G C A A G A G C  
SEQ. ID. NO. 30 G A A G A A C G T G G T T A G C C A C C G G G C A  
SEQ. ID. NO. 26 G A C A A C G T C A T C G C T T

SEQ. ID. NO. 38 T C C C G C A A G C G G T C C A G C A G C C T T G  
SEQ. ID. NO. 34 A A C A G C G A A G A C C C A T T C C C A C A G C  
SEQ. ID. NO. 30 C C C A C C A G C C G C T T T G G C A G T G C T G  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 G A G G C T C C A C G G G A T C C A C C C C C T C  
SEQ. ID. NO. 34 C C G A G A G G G C A G A A G C A G C A G C A G C C  
SEQ. ID. NO. 30 C T G C C A G G G C C A G C T C C A G C C T T G G  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 C T C C T C C A T C A G C A G C A A G A G C A A C  
SEQ. ID. NO. 34 G C T G G C C C T A A C C C A G C A A G A G C A G  
SEQ. ID. NO. 30 C C A A G G G T C T G G C T C C C A G T T T G T C  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 A G C G A A G A C C C A T T C C C A C A G C C C G  
SEQ. ID. NO. 34 C A G C A G C A G C C C C T G A C C C T C C C A C  
SEQ. ID. NO. 30 C C C A C T G T T T G C A A T G G C C G T G A G G  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 A G A G G C A G A A G C A G C A G C A G C C C G T  
SEQ. ID. NO. 34 A G C A G C A A C G A T C T C A G C A G C A G C C  
SEQ. ID. NO. 30 T G G T G G A C T C G A C A A C G T C A T C G C T  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 G G C C C T A A C C C A G C A A G A G C A G C A G  
SEQ. ID. NO. 34 C A G A T G C A A G C A G A A G G T C A T C T T  
SEQ. ID. NO. 30 T  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 C A G C A G C C C C T G A C C C T C C C A C A G C  
SEQ. ID. NO. 34 G G C A G C G G C A C G G T C A C C T T C T C A C  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

Figure 9n

SEQ. ID. NO. 38 A G C A A C G A T C T C A G C A G C A G C C C A G  
SEQ. ID. NO. 34 T G A G C T T T G A T G A G C C T C A G A A G A A  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 A T G C A A G C A G A A G G T C A T C T T G G C  
SEQ. ID. NO. 34 C G C C A T G G C C C A C G G G A A T T C T A C G  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 A G C G G C A C G G T C A C C T T C T C A C T G A  
SEQ. ID. NO. 34 C A C C A G A A C T C C C T G G A G G C C C A G A  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 G C T T T G A T G A G C C T C A G A A G A A C G C  
SEQ. ID. NO. 34 A A A G C A G C G A T A C G C T G A C C C G A C A  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 C A T G G C C C A C G G G A A T T C T A C G C A C  
SEQ. ID. NO. 34 C C A G C C A T T A C T C C C G C T G C A G T G C  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 C A G A A C T C C C T G G A G G C C C A G A A A A  
SEQ. ID. NO. 34 G G G G A A A C G G A C T T A G A T C T G A C C G  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 G C A G C G A T A C G C T G A C C C G A C A C C A  
SEQ. ID. NO. 34 T C C A G G A A A C A G G T C T G C A A G G A C C  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 G C C A T T A C T C C C G C T G C A G T G C G G G  
SEQ. ID. NO. 34 T G T G G G T G G A G A C C A G C G G C C A G A G  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

Figure 9o

SEQ. ID. NO. 38 GAAACGGACTTAGATCTGACCGTCC  
SEQ. ID. NO. 34 GTGGAGGACCCCTGAAGAGTTGTCCC  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 AGGAAACAGGTCTGCAAGGACCTGT  
SEQ. ID. NO. 34 CAGCACTTGTAGTGTCCAGTTACACA  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 GGGTGGAGACCAAGCGGCCAGAGGTG  
SEQ. ID. NO. 34 GAGCTTTGTCATCAGTGGTGGAGGC  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 GAGGACCCCTGAAGAGTTGTCCCCAG  
SEQ. ID. NO. 34 AGCACTGTTACAGAAAAACGTAGTGA  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 CACTTGTAGTGTCCAGTTCACAGAG  
SEQ. ID. NO. 34 ATTCA  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 CTTTGTCACTCAGTGGTGGAGGCAGC  
SEQ. ID. NO. 34  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 ACTGTTACAGAAAAACGTAGTGAATT  
SEQ. ID. NO. 34  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

SEQ. ID. NO. 38 C A  
SEQ. ID. NO. 34  
SEQ. ID. NO. 30  
SEQ. ID. NO. 26

ClustalW Formatted Alignments

SEQ. ID. NO. 39 M V C E G K R S A S C P C F F L L T A K F Y W I L  
SEQ. ID. NO. 35 M G S L L A L P A L L L L W G A V A E G P A K K V  
SEQ. ID. NO. 31 M A F Y S C C W V L L A L T W H T S A Y G P D Q R  
SEQ. ID. NO. 27 M G S L L A L L A L L P L W G A V A E G P A K K V

SEQ. ID. NO. 39 T M M Q R T H S Q E Y A H S I R V D G D I I L G G  
SEQ. ID. NO. 35 L T L E G D L V L G G L F P V H Q K G G P A E D C  
SEQ. ID. NO. 31 A Q K K G D I I L G G L F P I H F G V A A K D Q D  
SEQ. ID. NO. 27 L T L E G D L V L G G L F P V H Q K G G P A E D C

SEQ. ID. NO. 39 L F P V H A K G E R G V P C G E L K K E K G I H R  
SEQ. ID. NO. 35 G P V N E H R G I Q R L E A M L F A L D R I N R D  
SEQ. ID. NO. 31 L K S R P E S V E C I R Y N F R G F R W L Q A M I  
SEQ. ID. NO. 27 G P V N E H R G I Q R L E A M L F A L D R I N R D

SEQ. ID. NO. 39 L E A M L Y A I D Q I N K D P D L L S N I T L G V  
SEQ. ID. NO. 35 P H L L P G V R L G A H I L D S C S K D T H A L E  
SEQ. ID. NO. 31 F A I E E I N S S P A L L P N I T L G Y R I F D T  
SEQ. ID. NO. 27 P H L L P G V R L G A H I L D S C S K D T H A L E

SEQ. ID. NO. 39 R I L D T C S R D T Y A L E Q S L T F V Q A L I E  
SEQ. ID. NO. 35 Q A L D F V R A S L S R G A D G S R H I C P D G S  
SEQ. ID. NO. 31 C N T V S K A L E A T L S F V A Q N K I D S L N L  
SEQ. ID. NO. 27 Q A L D F V R A S L S R G A D G S R H I C P D G S

SEQ. ID. NO. 39 K D A S D V K C A N G D P P I F T K P D K I S G V  
SEQ. ID. NO. 35 Y A T H G D A P T A I T G V I G G S Y S D V S I Q  
SEQ. ID. NO. 31 D E F C N C S E H I P S T I A V V G A T G S G V S  
SEQ. ID. NO. 27 Y A T H G D A P T A I T G V I G G S Y S D V S I Q

SEQ. ID. NO. 39 I G A A A S S V S I M V A N I L R L F K I P Q I S  
SEQ. ID. NO. 35 V A N L L R L F Q I P Q I S Y A S T S A K L S D K  
SEQ. ID. NO. 31 T A V A N L L G L F Y I P Q V S Y A S S R L L S  
SEQ. ID. NO. 27 V A N L L R L F Q I P Q I S Y A S T S A K L S D K

SEQ. ID. NO. 39 Y A S T A P E L S D N T R Y D F F S R V V P P D S  
SEQ. ID. NO. 35 S R Y D Y F A R T V P P D F F Q A K A M A E I L R  
SEQ. ID. NO. 31 N K N Q F K S F L R T I P N D E H Q A T A M A D I  
SEQ. ID. NO. 27 S R Y D Y F A R T V P P D F F Q A K A M A E I L R

Figure 10a

SEQ. ID. NO. 39 Y Q A Q A M V D I V T A L G W N Y V S T L A S E G  
SEQ. ID. NO. 35 F F N W T Y V S T V A S E G D Y G E T G I E A F E  
SEQ. ID. NO. 31 I E Y F R W N W V G T I A A D D D Y G R P G I E K  
SEQ. ID. NO. 27 F F N W T Y V S T E A S E G D Y G E T G I E A F E

SEQ. ID. NO. 39 N Y G E S G V E A F T Q I S R E I G G V C I A Q S  
SEQ. ID. NO. 35 L E A R A R N I C V A T S E K V G R A M S R A A F  
SEQ. ID. NO. 31 F R E E A E E R D I C I D F S E L I S Q Y S D E E  
SEQ. ID. NO. 27 L E A R A R N I C V A T S E K V G R A M S R A A F

SEQ. ID. NO. 39 Q K I P R E P R P G E F E K I I K R L L E T P N A  
SEQ. ID. NO. 35 E G V V R A L L Q K P S A R V A V L F T R S E D A  
SEQ. ID. NO. 31 E I Q H V V V E V I Q N S T A K V I V V F S S G P D  
SEQ. ID. NO. 27 E G V V R A L L Q K P S A R V A V L F T R S E D A

SEQ. ID. NO. 39 R A V I M F A N E D D I R R I L E A A K K L N Q S  
SEQ. ID. NO. 35 R E L L A A S Q R L N A S F T W V A S D G W G A L  
SEQ. ID. NO. 31 L E P L I K E I V R R N I T G K I W L A S E A W A  
SEQ. ID. NO. 27 R E L L A A S Q R L N A S F T W V A S D G W G A L

SEQ. ID. NO. 39 G H F L W I G S D S W G S K I A P V Y Q Q E E I A  
SEQ. ID. NO. 35 E S V V A G S E G A A E G A I T I E L A S Y P I S  
SEQ. ID. NO. 31 S S S L I A M P Q Y F H V V G G T I G F A L K A G  
SEQ. ID. NO. 27 E S V V A G S E G A A E G A I T I E L A S Y P I S

SEQ. ID. NO. 39 E G A V T I L P K R A S I D G F D R Y F R S R T L  
SEQ. ID. NO. 35 D F A S Y F Q S L D P W N N S R N P W F R E F W E  
SEQ. ID. NO. 31 Q I P G F R E F L K K V H P R K S V H N G F A K E  
SEQ. ID. NO. 27 D F A S Y F Q S L D P W N N S R N P W F R E F W E

SEQ. ID. NO. 39 A N N R R N V W F A E F W E E N F G C K L G S H G  
SEQ. ID. NO. 35 Q R F R C S F R Q R D C A A H S L R A V P F E Q E  
SEQ. ID. NO. 31 F W E E T F N C H L Q E G A K G P L P V D T F L R  
SEQ. ID. NO. 27 Q R F R C S F R Q R D C A A H S L R A V P F E Q E

SEQ. ID. NO. 39 K R N S H I K K C T G L E R I A R D S S Y E Q E G  
SEQ. ID. NO. 35 S K I M F V V N A V Y A M A H A L H N M H R A L C  
SEQ. ID. NO. 31 G H E E S G D R F S N S S T A F R P L C T G D E N  
SEQ. ID. NO. 27 S K I M F V V N A V Y A M A H A L H N M H R A L C

Figure 10b

SEQ. ID. NO. 39 KVQFVIDAVYSMAYALHNMHKDLC  
SEQ. ID. NO. 35 PNTTRLCDAMRPVNGRRLYKDFVLN  
SEQ. ID. NO. 31 ISSVETPYIDYTHLRIISYNVYLAVY  
SEQ. ID. NO. 27 PNTTRLCDAMRPVNGRRLYKDFVLN

SEQ. ID. NO. 39 GYIGLCPRMSTIDGKEELLGYIRAVN  
SEQ. ID. NO. 35 VKFDAPPFRPADTHNEVRFDRGDG  
SEQ. ID. NO. 31 SIAHALQDIYTCLPGRGLFTNGSCA  
SEQ. ID. NO. 27 VKFDAPPFRPADTHNEVRFDRGDG

SEQ. ID. NO. 39 FNGSAGTPVTNFENGDAPGRYDIFQ  
SEQ. ID. NO. 35 GRYNIFTYLRAAGSGRYRYQKVGYWA  
SEQ. ID. NO. 31 DIKKVEAWQVLIKHLRHLNFTNNMGE  
SEQ. ID. NO. 27 GRYNIFTYLRAAGSGRYRYQKVGYWA

SEQ. ID. NO. 39 YQITNKSTTEYKVIGHWTNQLHLKVE  
SEQ. ID. NO. 35 EGLTLDTSLIPWASPSAGPLPASRC  
SEQ. ID. NO. 31 QVTFDECGLLVGNYSIINWHLSPED  
SEQ. ID. NO. 27 EGLTLDTSLIPWASPSAGPLAASRC

SEQ. ID. NO. 39 DMQWAHREHTHPASVCSPCKPGER  
SEQ. ID. NO. 35 SEPCLQNEVKSVQPGEVCCWLCIPC  
SEQ. ID. NO. 31 GSIVFKEVGYYNVYAKKGERLFINE  
SEQ. ID. NO. 27 SEPCLQNEVKSVQPGEVCCWLCIPC

SEQ. ID. NO. 39 KKTVKGVPCCWHCERCEGYNYQVDE  
SEQ. ID. NO. 35 QPYEYRLDEFTCADCGLGYWPNASL  
SEQ. ID. NO. 31 EKILWSGFSREVPPFSNCSRDCLAGT  
SEQ. ID. NO. 27 QPYEYRLDEFTCADCGLGYWPNASL

SEQ. ID. NO. 39 LSCELCPLDQRPNMNRGQCLIPPI  
SEQ. ID. NO. 35 TGC.FELPQEYIIRWGDAWAVGPV  
SEQ. ID. NO. 31 RKGIIIEGEPTCCFECVCPDGEYS  
SEQ. ID. NO. 27 TGC.FELPQEYIIRWGDAWAVGPV

SEQ. ID. NO. 39 KLEWHSPWA VV PV FVA ILGIIATT  
SEQ. ID. NO. 35 CLGALATLFVLGVFVRHNATPVVK  
SEQ. ID. NO. 31 ETDASACNKCPDDFWSNENHTSCFE  
SEQ. ID. NO. 27 CLGALATLFVLGVFVRHNATPVVK

Figure 10c

SEQ. ID. NO. 39 V I V T F V R Y N D T P I V R A S G R E L S Y V L  
SEQ. ID. NO. 35 S G R E L C Y I I L L G G V F L C Y C M T F I F I A  
SEQ. ID. NO. 31 L P Q E Y I R W G D A W A V G P V T I A C L G A L  
SEQ. ID. NO. 27 S G R E L C Y I I L L G G V F L C Y C M T F I F I A

SEQ. ID. NO. 39 L T G I F L C Y S I T F L M I A A P D T I I I C S F  
SEQ. ID. NO. 35 K P S T A V C T L R R L G L G T A F S V C Y S A L  
SEQ. ID. NO. 31 A T L F V L G V F V R H N A T P V V K A S G R E L  
SEQ. ID. NO. 27 K P S T A V C T L R R L G L G T A F S V C Y S A L

SEQ. ID. NO. 39 R R V F L G L G M C F S Y A A L L T K T N R I H R  
SEQ. ID. NO. 35 L T K T N R I A R I F G G A R E G A Q R P R F I S  
SEQ. ID. NO. 31 C Y I I L L G G V F L C Y C M T F I F I A K P S T A  
SEQ. ID. NO. 27 L T K T N R I A R I F G G A R E G A Q R P R F I S

SEQ. ID. NO. 39 I F E Q G K K S V T A P K F I S P A S Q L V I T F  
SEQ. ID. NO. 35 P A S Q V A I C L A L I S G Q L L I V V A W L V V  
SEQ. ID. NO. 31 V C T L R R L G L G T A F S V C Y S A L L T K T N  
SEQ. ID. NO. 27 P A S Q V A I C L A L I S G Q L L I V V A W L V V

SEQ. ID. NO. 39 S L I S V Q L L G V F V W F V V D P P H I I I D Y  
SEQ. ID. NO. 35 E A P G T G K E T A P E R R E V V T L R C N H R D  
SEQ. ID. NO. 31 R I A R I F G G A R E G A Q R P R F I S P A S Q V  
SEQ. ID. NO. 27 E A P G T G K E T A P E R R E V V T L R C N H R D

SEQ. ID. NO. 39 G E Q R T L D P E K A R G V L K C D I S D L S L I  
SEQ. ID. NO. 35 A S M L G S L A Y N V L L I A L C T L Y A F K T R  
SEQ. ID. NO. 31 A I C L A L I S G Q L L I V V A W L V V E A P G T  
SEQ. ID. NO. 27 A S M L G S L A Y N V L L I A L C T L Y A P N T R

SEQ. ID. NO. 39 C S L G Y S I L L M V T C T V Y A I K T R G V P E  
SEQ. ID. NO. 35 K C P E N F N E A K F I G F T M Y T T C I I W L A  
SEQ. ID. NO. 31 G K E T A P E R R E V V T L R C N H R D A S M L G  
SEQ. ID. NO. 27 K C P E N F N E A K F I G F T M Y T T C I I W L A

SEQ. ID. NO. 39 T F N E A K P I G F T M Y T T C I I W L A F I P I  
SEQ. ID. NO. 35 F L P I F Y V T S S D Y R V Q T T T M C V S V S L  
SEQ. ID. NO. 31 S L A Y N V L L I A L C T L Y A F N T R K C P E N  
SEQ. ID. NO. 27 L L P I F Y V T S S D Y R V Q T T T M C V S V S L

Figure 10d

SEQ. ID. NO. 39 F F G T A Q S A E K M Y I Q T T T L T V S M S L S  
SEQ. ID. NO. 35 S G S V V L G C L F A P K L H I I L F Q P Q K N T  
SEQ. ID. NO. 31 F N E A K F I G F T M Y T T C I I W L A L L P I F  
SEQ. ID. NO. 27 S G S V V L G C L F A P K L H I I L F Q P Q K N

SEQ. ID. NO. 39 A S V S L G M L Y M P K V Y I I I F H P E Q N T I  
SEQ. ID. NO. 35 I E E V R C S T A A H A F K V A A R A T L R R S N  
SEQ. ID. NO. 31 Y V T S S D Y R V Q T T T M C V S V S L S G S V V  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 E E V R C S T A A H A F K V A A R A T L R R S N V  
SEQ. ID. NO. 35 V S R K R S S S L G G S T G S T P S S S I S S K S  
SEQ. ID. NO. 31 L G C L F A P K L H I I L F Q P Q K N V V S H R A  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 S R K R S S S L G G S T G S T P S S S I S S K S N  
SEQ. ID. NO. 35 N S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q  
SEQ. ID. NO. 31 P T S R F G S A A A R A S S S L G Q G S G S Q F V  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q Q  
SEQ. ID. NO. 35 Q Q Q P L T L P Q Q Q R S Q Q Q P R C K Q K V I F  
SEQ. ID. NO. 31 P T V C N G R E V V D S T T S S L  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 Q Q P L T L P Q Q Q R S Q Q Q P R C K Q K V I F G  
SEQ. ID. NO. 35 G S G T V T F S L S F D E P Q K N A M A H G N S T  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 S G T V T F S L S F D E P Q K N A M A H G N S T H  
SEQ. ID. NO. 35 H Q N S L E A Q K S S D T L T R H Q P L L P L Q C  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 Q N S L E A Q K S S D T L T R H Q P L L P L Q C G  
SEQ. ID. NO. 35 G E T D L D L T V Q E T G L Q G P V G G D Q R P E  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

Figure 10e

SEQ. ID. NO. 39 E T D L D L T V Q E T G L Q G P V G G D Q R P E V  
SEQ. ID. NO. 35 V E D P E E L S P A L V V S S S Q S F V I S G G G  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 E D P E E L S P A L V V S S S Q S F V I S G G G S  
SEQ. ID. NO. 35 S T V T E N V V N S  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

SEQ. ID. NO. 39 T V T E N V V N S  
SEQ. ID. NO. 35  
SEQ. ID. NO. 31  
SEQ. ID. NO. 27

Figure 10f

ClustalW Formatted Alignments

SEQ. ID. NO. 40 A T G G T A T G C C G A G G G A A A G C G A T C A G  
SEQ. ID. NO. 46 A T G G G A T C G C T G C T T G C G C T C C C G G  
SEQ. ID. NO. 36 A T G G G A T C G C T G C T T G C G C T C C C G G  
SEQ. ID. NO. 32 A T G G C A T T T A T A G C T G C T G C T G G G

SEQ. ID. NO. 40 C C T C T T G C C C T T G T T T C T T C C T C T T  
SEQ. ID. NO. 46 C A C T G C T G C T G C T G T G G G G T G C T G T  
SEQ. ID. NO. 36 C A C T G C T G C T G C T G C T G T G G G G T G C T G T  
SEQ. ID. NO. 32 T C C T C T T G G C A C T C A C C T G G C A C A C

SEQ. ID. NO. 40 G A C C G C C A A G T T C T A C T G G A T C C T C  
SEQ. ID. NO. 46 G G C T G A G G G C C C A G C C A A G A A G G T G  
SEQ. ID. NO. 36 G G C T G A G G G C C C A G C C A A G A A G G T G  
SEQ. ID. NO. 32 C T C T G C C T A C G G G C C A G A C C A G C G A

SEQ. ID. NO. 40 A C A A T G A T G C A A A G A A C T C A C A G C C  
SEQ. ID. NO. 46 C T G A C C C T G G A G G G A G A C T T G G T G C  
SEQ. ID. NO. 36 C T G A C C C T G G A G G G A G A C T T G G T G C  
SEQ. ID. NO. 32 G C C C A A A A G A A A G G G G A C A T T A T C C

SEQ. ID. NO. 40 A G G A G T A T G C C C A T T C C A T A C G G G T  
SEQ. ID. NO. 46 T G G G T G G G C T G T T C C C A G T G C A C C A  
SEQ. ID. NO. 36 T G G G T G G G C T G T T C C C A G T G C A C C A  
SEQ. ID. NO. 32 T T G G G G G C T C T T C C T A T T C A T T T

SEQ. ID. NO. 40 G G A T G G G G A C A T T A T T T T G G G G G G T  
SEQ. ID. NO. 46 G A A G G G C G G C C C A G C A G A G G A C T G T  
SEQ. ID. NO. 36 G A A G G G C G G C C C A G C A G A G G A C T G T  
SEQ. ID. NO. 32 T G G A G T A G C A G C T A A A G A T C A A G A T

SEQ. ID. NO. 40 C T C T T C C C T G T C C A C G C A A A G G G A G  
SEQ. ID. NO. 46 G G T C C T G T C A A T G A G C A C C G T G G C A  
SEQ. ID. NO. 36 G G T C C T G T C A A T G A G C A C C G T G G C A  
SEQ. ID. NO. 32 C T C A A A T C A A G G C C G G A G T C T G T G G

SEQ. ID. NO. 40 A G A G A G G G G T G C C T T G T G G G G A G C T  
SEQ. ID. NO. 46 T C C A G C G C C T G G A G G G C A T G C T T T T  
SEQ. ID. NO. 36 T C C A G C G C C T G G A G G G C A T G C T T T T  
SEQ. ID. NO. 32 A A T G T A T C A G G T A T A A T T T C C G T G G

SEQ. ID. NO. 40 G A A G A A G G A A A A G G G G A T T C A C A G A  
SEQ. ID. NO. 46 T G C A C T G G A C C G C A T C A A C C G T G A C  
SEQ. ID. NO. 36 T G C A C T G G A C C G C A T C A A C C G T G A C  
SEQ. ID. NO. 32 G T T T C G C T G G T T A C A G G C T A T G A T A

SEQ. ID. NO. 40 C T G G A G G C C A T G C T T T A T G C A A T T G  
SEQ. ID. NO. 46 C C G C A C C T G C T G C C T G G C G T G C G C C  
SEQ. ID. NO. 36 C C G C A C C T G C T G C C T G G C G T G C G C C  
SEQ. ID. NO. 32 T T T G C C A T A G A G G A G A T A A A C A G C A

SEQ. ID. NO. 40 A C C A G A T T A A C A A G G A C C C T G A T C T  
SEQ. ID. NO. 46 T G G G T G C A C A C A T C C T C G A C A G T T G  
SEQ. ID. NO. 36 T G G G T G C A C A C A T C C T C G A C A G T T G  
SEQ. ID. NO. 32 G C C C A G C C C T T C T C C C A A C T T G A C

SEQ. ID. NO. 40 C C T T T C C A A C A T C A C T C T G G G T G T C  
SEQ. ID. NO. 46 C T C C A A G G A C A C A C A T G C G C T G G A G  
SEQ. ID. NO. 36 C T C C A A G G A C A C A C A T G C G C T G G A G  
SEQ. ID. NO. 32 G C T G G G A T A C A G G A T A T T G A C A C T

SEQ. ID. NO. 40 C G C A T C C T C G A C A C G T G C T C T A G G G  
SEQ. ID. NO. 46 C A G G C A C T G G A C T T T G T G C G T G C C T  
SEQ. ID. NO. 36 C A G G C A C T G G A C T T T G T G C G T G C C T  
SEQ. ID. NO. 32 T G C A A C A C C G T T T C T A A G G C C T T G G

SEQ. ID. NO. 40 A C A C C T A T G C T T T G G A G C A G T C T C T  
SEQ. ID. NO. 46 C A C T C A G C C G T G G T G C T G A T G G C T C  
SEQ. ID. NO. 36 C A C T C A G C C G T G G T G C T G A T G G C T C  
SEQ. ID. NO. 32 A A G C C A C C C T G A G T T T G T T G C T C A

SEQ. ID. NO. 40 A A C A T T C G T G C A G G C A T T A A T A G A G  
SEQ. ID. NO. 46 A C G C C A C A C A T C T G C C C C G A C G G C T C T  
SEQ. ID. NO. 36 A C G C C A C A C A T C T G C C C C G A C G G C T C T  
SEQ. ID. NO. 32 A A A C A A A A T T G A T T C T T G A A C C T T

SEQ. ID. NO. 40 A A A G A T G C T T C G G A T G T G A A G T G T G  
SEQ. ID. NO. 46 T A T G C G A C C C A T G G T G A T G C T C C C A  
SEQ. ID. NO. 36 T A T G C G A C C C A T G G T G A T G C T C C C A  
SEQ. ID. NO. 32 G A T G A G T T C T G C A A C T G C T C A G A G C

Figure 11b

SEQ. ID. NO. 40 C T A A T G G A G A T C C A C C C A T T T C A C  
SEQ. ID. NO. 46 C T G C C A T C A C T G G T G T T A T T G G C G G  
SEQ. ID. NO. 36 C T G C C A T C A C T G G T G T T A T T G G C G G  
SEQ. ID. NO. 32 A C A T T C C C T C T A C G A T T G C T G T G G T

SEQ. ID. NO. 40 C A A G C C C G A C A A G A T T T C T G G C G T C  
SEQ. ID. NO. 46 T T C C T A C A G T G A T G T C T C C A T C C A G  
SEQ. ID. NO. 36 T T C C T A C A G T G A T G T C T C C A T C C A G  
SEQ. ID. NO. 32 G G G A G C A A C T G G C T C A G G C G T C T C C

SEQ. ID. NO. 40 A T A G G T G C T G C A G C A A G C T C C G T G T  
SEQ. ID. NO. 46 G T G G C C A A C C T C T T G A G G C T A T T T C  
SEQ. ID. NO. 36 G T G G C C A A C C T C T T G A G G C T A T T T C  
SEQ. ID. NO. 32 A C G G C A G T G G C A A A T C T G C T G G G G C

SEQ. ID. NO. 40 C C A T C A T G G T T G C T A A C A T T T T A A G  
SEQ. ID. NO. 46 A G A T C C C A C A G A T T A G C T A C G C C T C  
SEQ. ID. NO. 36 A G A T C C C A C A G A T T A G C T A C G C C T C  
SEQ. ID. NO. 32 T C T T C T A C A T T C C C C A G G T C A G T T A

SEQ. ID. NO. 40 A C T T T T A A G A T A C C T C A A A T C A G C  
SEQ. ID. NO. 46 T A C C A G T G C C A A G C T G A G T G A C A A G  
SEQ. ID. NO. 36 T A C C A G T G C C A A G C T G A G T G A C A A G  
SEQ. ID. NO. 32 T G C C T C C T C C A G A C T C C T C A G C

SEQ. ID. NO. 40 T A T G C A T C C A C A G C C C C A G A G C T A A  
SEQ. ID. NO. 46 T C C C G C T A T G A C T A C T T T G C C C G C A  
SEQ. ID. NO. 36 T C C C G C T A T G A C T A C T T T G C C C G C A  
SEQ. ID. NO. 32 A A C A A G A A T C A A T T C A A G T C T T T C C

SEQ. ID. NO. 40 G T G A T A A C A C C A G G T A T G A C T T T T T  
SEQ. ID. NO. 46 C A G T G C C T C C T G A C T T C T T C C A A G C  
SEQ. ID. NO. 36 C A G T G C C T C C T G A C T T C T T C C A A G C  
SEQ. ID. NO. 32 T C C G A A C C A T C C C C A A T G A T G A G C A

SEQ. ID. NO. 40 C T C T C G A G T G G T T C C G C C T G A C T C C  
SEQ. ID. NO. 46 C A A G G C C A T G G C T G A G A T T C T C C G C  
SEQ. ID. NO. 36 C A A G G C C A T G G C T G A G A T T C T C C G C  
SEQ. ID. NO. 32 C C A G G C C A C T G C C A T G G C A G A C A T C

SEQ. ID. NO. 40 T A C C A A G C C C A A G C C A T G G T G G A C A  
SEQ. ID. NO. 46 T T C T T C A A C T G G A C C T A T G T G T C C A  
SEQ. ID. NO. 36 T T C T T C A A C T G G A C C T A T G T G T C C A  
SEQ. ID. NO. 32 A T C G A G T A T T C C G C T G G A A C T G G G

SEQ. ID. NO. 40 T C G T G A C A G C A C T G G G A T G G A A T T A  
SEQ. ID. NO. 46 C T G T G G C G T C T G A G G G G C G A C T A T G G  
SEQ. ID. NO. 36 C T G T G G C G T C T G A G G G G C G A C T A T G G  
SEQ. ID. NO. 32 T G G G C A C A A T T G C A G C T G A T G A C G A

SEQ. ID. NO. 40 T G T T T C G A C A C T G G C T T C T G A G G G G  
SEQ. ID. NO. 46 C G A G A C A G G C A T T G A G G C C T T T G A G  
SEQ. ID. NO. 36 C G A G A C A G G C A T T G A G G C C T T T G A G  
SEQ. ID. NO. 32 C T A T G G G C G G C C G G G A T T G A G A A A

SEQ. ID. NO. 40 A A C T A T G G T G A G A G C G G T G T G G A G G  
SEQ. ID. NO. 46 C T A G A G G G C T C G T G C C C G C A A C A T C T  
SEQ. ID. NO. 36 C T A G A G G G C T C G T G C C C G C A A C A T C T  
SEQ. ID. NO. 32 T T C C G A G A G G A A G C T G A G G A A A G G G

SEQ. ID. NO. 40 C C T T C A C C C A G A T C T C G A G G G A G A T  
SEQ. ID. NO. 46 G T G T G G C C A C C T C G G A G A A A G T G G G  
SEQ. ID. NO. 36 G T G T G G C C A C C T C G G A G A A A G T G G G  
SEQ. ID. NO. 32 A T A T C T G C A T C G A C T T C A G T G A A C T

SEQ. ID. NO. 40 T G G T G G T G T T T G C A T T G C T C A G T C A  
SEQ. ID. NO. 46 C C G T G C C A T G A G G C C G C G G C C T T T  
SEQ. ID. NO. 36 C C G T G C C A T G A G G C C G C G G C C T T T  
SEQ. ID. NO. 32 C A T C T C C C A G T A C T C T G A T G A G G A A

SEQ. ID. NO. 40 C A G A A A A T C C C A C G T G A A C C A A G A C  
SEQ. ID. NO. 46 G A G G G T G T G G T G C G A G C C C T G C T G C  
SEQ. ID. NO. 36 G A G G G T G T G G T G C G A G C C C T G C T G C  
SEQ. ID. NO. 32 G A G A T C C A G C A T G T G G T A G A G G T G A

SEQ. ID. NO. 40 C T G G A G A A T T T G A A A A A A A T T A T C A A  
SEQ. ID. NO. 46 A G A A G C C C A G T G C C C G C G T G G C T G T  
SEQ. ID. NO. 36 A G A A G C C C A G T G C C C G C G T G G C T G T  
SEQ. ID. NO. 32 T T C A A A A T T C C A C G G C C A A A G T C A T

Figure 11d

SEQ. ID. NO. 40 A C G C C T G C T A G A A A C A C C T A A T G C T  
SEQ. ID. NO. 46 C C T G T T C A C C C G T T C T G A G G A T G C C  
SEQ. ID. NO. 36 C C T G T T C A C C C G T T C T G A G G A T G C C  
SEQ. ID. NO. 32 C G T G G T T T C T C C A G T G G G C C A G A T  
  
SEQ. ID. NO. 40 C G A G C A G T G A T T A T G T T T G C C A A T G  
SEQ. ID. NO. 46 C G G G A G C T G C T T G C T G C C A G C C A G C  
SEQ. ID. NO. 36 C G G G A G C T G C T T G C T G C C A G C C A G C  
SEQ. ID. NO. 32 C T T G A G C C C C T C A T C A A G G A G A T T G  
  
SEQ. ID. NO. 40 A G G A T G A C A T C A G G A G G A T A T T G G A  
SEQ. ID. NO. 46 G C C T C A A T G C C A G C T T C A C C T G G G T  
SEQ. ID. NO. 36 G C C T C A A T G C C A G C T T C A C C T G G G T  
SEQ. ID. NO. 32 T C C G G G C A A T A T C A C G G G C A A G A T  
  
SEQ. ID. NO. 40 A G C A G C A A A A A A A C T A A A C C A A A G T  
SEQ. ID. NO. 46 G G C C A G T G A T G G T T G G G G G G C C C T G  
SEQ. ID. NO. 36 G G C C A G T G A T G G T T G G G G G G C C C T G  
SEQ. ID. NO. 32 C T G G C T G G C C A G C G A G G C C T G G G C C  
  
SEQ. ID. NO. 40 G G G C A T T T C T C T G G A T T G G C T C A G  
SEQ. ID. NO. 46 G A G A G T G T G G T G G C A G G C A G T G A G G  
SEQ. ID. NO. 36 G A G A G T G T G G T G G C A G G C A G T G A G G  
SEQ. ID. NO. 32 A G C T C C T C C C T G A T C G C C A T G C C T C  
  
SEQ. ID. NO. 40 A T A G T T G G G G A T C C A A A A T A G C A C C  
SEQ. ID. NO. 46 G G G C T G C T G A G G G T G C T A T C A C C A T  
SEQ. ID. NO. 36 G G G C T G C T G A G G G T G C T A T C A C C A T  
SEQ. ID. NO. 32 A G T A C T T C C A C G T G G T T G G C G G C A C  
  
SEQ. ID. NO. 40 T G T C T A T C A G C A A G A G G A G A T T G C A  
SEQ. ID. NO. 46 C G A G C T G G C C T C C T A C C C C A T C A G T  
SEQ. ID. NO. 36 C G A G C T G G C C T C C T A C C C C A T C A G T  
SEQ. ID. NO. 32 C A T T G G A T T C G C T C T G A A G G C T G G G  
  
SEQ. ID. NO. 40 G A A G G G G C T G T G A C A A T T T G C C C A  
SEQ. ID. NO. 46 G A C T T T G C C T C C T A C T T C C A G A G C C  
SEQ. ID. NO. 36 G A C T T T G C C T C C T A C T T C C A G A G C C  
SEQ. ID. NO. 32 C A G A T C C C A G G C T T C C G G G A A T T C C

Figure 11e

SEQ. ID. NO. 40 AACGAGCATCAATTGATGGATTGAA  
SEQ. ID. NO. 46 TGGACCCCTTGGAACAAACAGCCGGAA  
SEQ. ID. NO. 36 TGGACCCCTTGGAACAAACAGCCGGAA  
SEQ. ID. NO. 32 TGAAGAAGGTCCATCCAGGAAGTC

SEQ. ID. NO. 40 TCGATACTTTAGAACGCCGAACCTCTT  
SEQ. ID. NO. 46 CCCCTGGTTCCGTGAATTCTGGGAG  
SEQ. ID. NO. 36 CCCCTGGTTCCGTGAATTCTGGGAG  
SEQ. ID. NO. 32 TGTCCACAAATGGTTTGCCAAGGGAG

SEQ. ID. NO. 40 GCCAATAATCGAACGAAATGTGTGGT  
SEQ. ID. NO. 46 CAGAGGTTCCGCTGCAGCTTCCGGC  
SEQ. ID. NO. 36 CAGAGGTTCCGCTGCAGCTTCCGGC  
SEQ. ID. NO. 32 TTTTGGAAAGAACATTAACTGCC

SEQ. ID. NO. 40 TTGCAAGATTCTGGGAGGGAGAATT  
SEQ. ID. NO. 46 AGCGAGACTGCGCAGCCCACCTCTCT  
SEQ. ID. NO. 36 AGCGAGACTGCGCAGCCCACCTCTCT  
SEQ. ID. NO. 32 ACCTCACAGAACAGGTGCAAAAGGACC

SEQ. ID. NO. 40 TGGCTGCAAGTTAGGATCACATGGG  
SEQ. ID. NO. 46 CCGGGCTGTGCCCTTGAGCAGGGAG  
SEQ. ID. NO. 36 CCGGGCTGTGCCCTTGAGCAGGGAG  
SEQ. ID. NO. 32 TTACCTGTGGACACCTTCTGAGA

SEQ. ID. NO. 40 AAAAGGAACAGTCATATAAGAAAT  
SEQ. ID. NO. 46 TCCAAGATCATGTTTGTGGTCAATG  
SEQ. ID. NO. 36 TCCAAGATCATGTTTGTGGTCAATG  
SEQ. ID. NO. 32 GGTACGAAAGTGGCGACAGGT

SEQ. ID. NO. 40 GCACAGGGCTGGAGCGAACATTGCTCG  
SEQ. ID. NO. 46 CAGTGTACGCCATGGCCCATGCGCT  
SEQ. ID. NO. 36 CAGTGTACGCCATGGCCCATGCGCT  
SEQ. ID. NO. 32 TTAGCAACAGCTCGACAGCCTTCG

SEQ. ID. NO. 40 GGATTCACTTATGAACAGGAAGGA  
SEQ. ID. NO. 46 CCACAAACATGCACCGTGCCTCTG  
SEQ. ID. NO. 36 CCACAAACATGCACCGTGCCTCTG  
SEQ. ID. NO. 32 ACCCTCTGTACAGGGATGAGAAC

SEQ. ID. NO. 40 A A G G T C C A A T T T G T A A T T G A T G C T G  
SEQ. ID. NO. 46 C C C A A C A C C A C C C C G G C T C T G T G A C G  
SEQ. ID. NO. 36 C C C A A C A C C A C C C C G G C T C T G T G A C G  
SEQ. ID. NO. 32 A T C A G C A G T G T C G A G A C C C C T T A C A

SEQ. ID. NO. 40 T A T A T T C C A T G G C T T A C G C C C T G C A  
SEQ. ID. NO. 46 C G A T G C G G G C C A G T T A A C G G G C G C C G  
SEQ. ID. NO. 36 C G A T G C G G G C C A G T T A A C G G G C G C C G  
SEQ. ID. NO. 32 T A G A T T A C A C G C A T T T A C G G A T A T C

SEQ. ID. NO. 40 C A A T A T G C A C A A A G A T C T C T G C C C T  
SEQ. ID. NO. 46 C C T C T A C A A A G G A C T T T G C T C A A C  
SEQ. ID. NO. 36 C C T C T A C A A A G G A C T T T G C T C A A C  
SEQ. ID. NO. 32 C T A C A A T G T G T A C T T A G C A G T C T A C

SEQ. ID. NO. 40 G G A T A C A T T G G C C T T T G T C C A C G A A  
SEQ. ID. NO. 46 G T C A A G T T T G A T G C C C C C T T T C G C C  
SEQ. ID. NO. 36 G T C A A G T T T G A T G C C C C C T T T C G C C  
SEQ. ID. NO. 32 T C C A T T G C C C A C G C C T T G C A A G A T A

SEQ. ID. NO. 40 T G A G T A C C A T T G A T G G G A A A G A G C T  
SEQ. ID. NO. 46 C A G C T G A C A C C C A C A A T G A G G G T C C G  
SEQ. ID. NO. 36 C A G C T G A C A C C C A C A A T G A G G G T C C G  
SEQ. ID. NO. 32 T A T A T A C C T G C T T A C C T G G G A G A G G

SEQ. ID. NO. 40 A C T T G G T T A T A T T C G G G C T G T A A A T  
SEQ. ID. NO. 46 C T T T G A C C G C T T T G G T G A T G G T A T T  
SEQ. ID. NO. 36 C T T T G A C C G C T T T G G T G A T G G T A T T  
SEQ. ID. NO. 32 G C T C T T C A C C A A T G G C T C C T G T G C A

SEQ. ID. NO. 40 T T T A A T G G C A G T G C T G G C A C T C C T G  
SEQ. ID. NO. 46 G G C C G C T A C A A C A T C T T C A C C T A T C  
SEQ. ID. NO. 36 G G C C G C T A C A A C A T C T T C A C C T A T C  
SEQ. ID. NO. 32 G A C A T C A A G A A A G T T G A G G G G T G G C

SEQ. ID. NO. 40 T C A C T T T A A T G A A A A C G G A G A T G C  
SEQ. ID. NO. 46 T G C G T G C A G G C A G T G G G G G C T A T C G  
SEQ. ID. NO. 36 T G C G T G C A G G C A G T G G G G G C T A T C G  
SEQ. ID. NO. 32 A G G T C C T G A A G C A C C T A C G G C A T C T

SEQ. ID. NO. 40 T C C T G G A C G T T A T G A T A T C T T C C A G  
SEQ. ID. NO. 46 C T A C C A G A A G G T G G G C T A C T G G G C A  
SEQ. ID. NO. 36 C T A C C A G A A G G T G G G C T A C T G G G C A  
SEQ. ID. NO. 32 A A A C T T T A C A A A C A A T A T G G G G G A G

SEQ. ID. NO. 40 T A T C A A A T A A C C A A C A A A A G C A C A G  
SEQ. ID. NO. 46 G A A G G C T T G A C T C T G G A C A C C A G C C  
SEQ. ID. NO. 36 G A A G G C T T G A C T C T G G A C A C C A G C C  
SEQ. ID. NO. 32 C A G G T G A C C T T G A T G A G T G T G G T G

SEQ. ID. NO. 40 A G T A C A A A G T C A T C G G C C A C T G G A C  
SEQ. ID. NO. 46 T C A T C C C A T G G G C C T C A C C C T C A G C  
SEQ. ID. NO. 36 T C A T C C C A T G G G C C T C A C C C T C A G C  
SEQ. ID. NO. 32 A C C T G G T G G G G A A C T A T T C C A T C A T

SEQ. ID. NO. 40 C A A T C A G C T T C A T C T A A A A G T G G A A  
SEQ. ID. NO. 46 C G G C C C C C T G C C C G C C T C T C G C T G C  
SEQ. ID. NO. 36 C G G C C C C C T G C C C G C C T C T C G C T G C  
SEQ. ID. NO. 32 C A A C T G G C A C C T C T C C C C A G A G G A T

SEQ. ID. NO. 40 G A C A T G C A G T G G G C T C A T A G A G A A C  
SEQ. ID. NO. 46 A G T G A G G C C C T G C C C T C C A G A A T G A G G  
SEQ. ID. NO. 36 A G T G A G G C C C T G C C C T C C A G A A T G A G G  
SEQ. ID. NO. 32 G G C T C C A T C G T G T T T A A G G A A G T C G

SEQ. ID. NO. 40 A T A C T C A C C C G G C G T C T G T C T G C A G  
SEQ. ID. NO. 46 T G A A G A G T G T G C A G C C G G G C G A A G T  
SEQ. ID. NO. 36 T G A A G A G T G T G C A G C C G G G C G A A G T  
SEQ. ID. NO. 32 G G T A T T A C A A C G T C T A T G C C A A G A A

SEQ. ID. NO. 40 C C T G C C G T G T A A G C C A G G G G A G A G G  
SEQ. ID. NO. 46 C T G C T G C T G G C T C T G C A T T C C G T G C  
SEQ. ID. NO. 36 C T G C T G C T G G C T C T G C A T T C C G T G C  
SEQ. ID. NO. 32 G G G A G A A A G A C T C T T C A T C A A C G A G

SEQ. ID. NO. 40 A A G A A A A C G G T G A A A G G G G T C C C T T  
SEQ. ID. NO. 46 C A G C C C T A T G A G T A C C G A T T G G A C G  
SEQ. ID. NO. 36 C A G C C C T A T G A G T A C C G A T T G G A C G  
SEQ. ID. NO. 32 G A G A A A A T C C T G T G G A G T G G G T T C T

Figure 11h

SEQ. ID. NO. 40 G C T G C T G G C A C T G T G A A C G C T G T G A  
SEQ. ID. NO. 46 A A T T C A C T T G C G C T G A T T G T G G C C T  
SEQ. ID. NO. 36 A A T T C A C T T G C G C T G A T T G T G G C C T  
SEQ. ID. NO. 32 C C A G G G A G G T G C C C T T C T C C A A C T G

SEQ. ID. NO. 40 A G G T T A C A A A C T A C C A G G T G G A T G A G  
SEQ. ID. NO. 46 G G G C T A C T G G C C C A A T G C C A G C C T G  
SEQ. ID. NO. 36 G G G C T A C T G G C C C A A T G C C A G C C T G  
SEQ. ID. NO. 32 C A G C C G A G A C T G C C T G G C A G G G A C C

SEQ. ID. NO. 40 C T G T C C T G T G A A A C T T T G C C C T C T G G  
SEQ. ID. NO. 46 A C T G G C T G C T T C G A A C T G C C C C A G G  
SEQ. ID. NO. 36 A C T G G C T G C T T C G A A C T G C C C C A G G  
SEQ. ID. NO. 32 A G G A A A G G G A T C A T T G A G G G G G A G C

SEQ. ID. NO. 40 A T C A G A G A C C C A A C A T G A A C C C G C A C  
SEQ. ID. NO. 46 A G T A C A T C C G C T G G G G G G A T G C C T G  
SEQ. ID. NO. 36 A G T A C A T C C G C T G G G G G G A T G C C T G  
SEQ. ID. NO. 32 C C A C C T G C T G C T T T G A G T G T G T G G A

SEQ. ID. NO. 40 A G G C T G C C A G C T T A T C C C C A T C A T C  
SEQ. ID. NO. 46 G G C T G T G G G A C C T G T C A C C A T C G C C  
SEQ. ID. NO. 36 G G C T G T G G G A C C T G T C A C C A T C G C C  
SEQ. ID. NO. 32 G T G T C C T G A T G G G A G T A T A G T G A T

SEQ. ID. NO. 40 A A A T T G G A G T G G C A T T C T C C C T G G G  
SEQ. ID. NO. 46 T G C C T C G G T G C C C T G G C C A C C C T C T  
SEQ. ID. NO. 36 T G C C T C G G T G C C C T G G C C A C C C T C T  
SEQ. ID. NO. 32 G A G A C A G A T G C C A G T G C C T G T A A C A

SEQ. ID. NO. 40 C T G T G G T G C C T G T G T T T G T T G C A A T  
SEQ. ID. NO. 46 T T G T G C T G G G T G T C T T T G T G C G G G C A  
SEQ. ID. NO. 36 T T G T G C T G G G T G T C T T T G T G C G G G C A  
SEQ. ID. NO. 32 A G T G C C C A G A T G A C T T C T G G T C C A A

SEQ. ID. NO. 40 A T T G G G A A T C A T C G C C A C C A C C T T T  
SEQ. ID. NO. 46 C A A T G C C A C A C C A G T G G T C A A G G G C C  
SEQ. ID. NO. 36 C A A T G C C A C A C C A G T G G T C A A G G G C C  
SEQ. ID. NO. 32 T G A G A A C C A C A C C T C C T G C T T C G A A

Figure III

SEQ. ID. NO. 40 G T G A T C G T G A C C T T T G T C C G C T A T A  
SEQ. ID. NO. 46 T C A G G T C C G G G A G C T C T G C T A C A T C C  
SEQ. ID. NO. 36 T C A G G T C C G G G A G C T C T G C T A C A T C C  
SEQ. ID. NO. 32 C T G C C C C A G G A G T A C A T C C G C T G G G

SEQ. ID. NO. 40 A T G A C A C A C C T A T C G T G A G G G G C T T C  
SEQ. ID. NO. 46 T G C T G G G T G G T G T C T T C C T C T G C T A  
SEQ. ID. NO. 36 T G C T G G G T G G T G T C T T C C T C T G C T A  
SEQ. ID. NO. 32 G C G A T G C C T G G G C T G T G G G A C C T G T

SEQ. ID. NO. 40 A G G A C G G C G A A C T T A G T T A C G T G C T C  
SEQ. ID. NO. 46 C T G C A T G A C C T T C A T C T T C A T T G C C  
SEQ. ID. NO. 36 C T G C A T G A C C T T C A T C T T C A T T G C C  
SEQ. ID. NO. 32 C A C C A T C G C C T G C C T C G G T G C C C T G

SEQ. ID. NO. 40 C T A A C G G G G A T T T T C T C T G T T A T T  
SEQ. ID. NO. 46 A A G C C A T C C A C G G C A G T G T G T A C C T  
SEQ. ID. NO. 36 A A G C C A T C C A C G G C A G T G T G T A C C T  
SEQ. ID. NO. 32 G C C A C C C T G T T T G T G C T G G G T G T C T

SEQ. ID. NO. 40 C A A T C A C G T T T T A A T G A T T G C A G C  
SEQ. ID. NO. 46 T A C G G G G T C T T G G T T T G G G C A C T G C  
SEQ. ID. NO. 36 T A C G G G G T C T T G G T T T G G G C A C T G C  
SEQ. ID. NO. 32 T T G T G C G G C A C A A T G C C A C A C C A G T

SEQ. ID. NO. 40 A C C A G A T A C A A T C A T A T G C T C C T T C  
SEQ. ID. NO. 46 C T T C T C T G T C T G C T A C T C A G C C C T G  
SEQ. ID. NO. 36 C T T C T C T G T C T G C T A C T C A G C C C T G  
SEQ. ID. NO. 32 G G T C A A G G C C T C A G G T C G G G A G C T C

SEQ. ID. NO. 40 C G A C G G G T C T T C C T A G G A C T T G G C A  
SEQ. ID. NO. 46 C T C A C C A A G A C C A A C C G C A T T G C A C  
SEQ. ID. NO. 36 C T C A C C A A G A C C A A C C G C A T T G C A C  
SEQ. ID. NO. 32 T G C T A C A T C C T G C T G G G T G G T G T C T

SEQ. ID. NO. 40 T G T G T T T C A G C T A T G C A G C C C T T C T  
SEQ. ID. NO. 46 G C A T C T T C G G T G G G G C C C G G G A G G G  
SEQ. ID. NO. 36 G C A T C T T C G G T G G G G C C C G G G A G G G  
SEQ. ID. NO. 32 T C C T C T G C T A C T G C A T G A C C T T C A T

Figure 11j

SEQ. ID. NO. 40 G A C C A A A A C A A A C C G T A T C C A C C G A  
SEQ. ID. NO. 46 T G C C C A G C G G G C C A C G C T T C A T C A G T  
SEQ. ID. NO. 36 T G C C C A G C G G G C C A C G C T T C A T C A G T  
SEQ. ID. NO. 32 C T T C A T T G C C A A G C C A T C C A C G G C A

SEQ. ID. NO. 40 A T A T T T G A G C A G G G G A A G A A A T C T G  
SEQ. ID. NO. 46 C C T G C C T C A C A G G T G G G C C A T C T G C C  
SEQ. ID. NO. 36 C C T G C C T C A C A G G T G G G C C A T C T G C C  
SEQ. ID. NO. 32 G T G T G T A C C T T A C G G C G T C T T G G T T

SEQ. ID. NO. 40 T C A C A G C G C C C A A G T T C A T T A G T C C  
SEQ. ID. NO. 46 T G G C A C T T A T C T C G G G G C C A G C T G C T  
SEQ. ID. NO. 36 T G G C A C T T A T C T C G G G G C C A G C T G C T  
SEQ. ID. NO. 32 T G G G C A C T G C C T T C T C T G T C T G C T A

SEQ. ID. NO. 40 A G C A T C T C A G C T G G T G A T C A C C T T C  
SEQ. ID. NO. 46 C A T C G T G G T C G C C T G G C T G G T G G T G  
SEQ. ID. NO. 36 C A T C G T G G T C G C C T G G C T G G T G G T G  
SEQ. ID. NO. 32 C T C A G C C C T G C T C A C C A A G A C C A A C

SEQ. ID. NO. 40 A G C C T C A T C T C C G T C C A G C T C C T T G  
SEQ. ID. NO. 46 G A G G C A C C G G G C A C A G G C A A G G A G A  
SEQ. ID. NO. 36 G A G G C A C C G G G C A C A G G C A A G G A G A  
SEQ. ID. NO. 32 C G C A T T G C A C G C A T C T T C G G T G G G G

SEQ. ID. NO. 40 G A G T G T T T G T C T G G T T T G T T G T G G A  
SEQ. ID. NO. 46 C A G C C C C C G A A C G G G G G G A G G G T G G T  
SEQ. ID. NO. 36 C A G C C C C C G A A C G G G G G G A G G G T G G T  
SEQ. ID. NO. 32 C C C G G G A G G G T G C C C A G C G G C C A C G

SEQ. ID. NO. 40 T C C C C C C C A C A T C A T C A T T G A C T A T  
SEQ. ID. NO. 46 G A C A C T G C G C T G C A A C C A C C G C G A T  
SEQ. ID. NO. 36 G A C A C T G C G C T G C A A C C A C C G C G A T  
SEQ. ID. NO. 32 C T T C A T C A G T C C T G C C T C A C A G G T G

SEQ. ID. NO. 40 G G A G A G C A G C G G A C A C T A G A T C C A G  
SEQ. ID. NO. 46 G C A A G T A T G T T G G G C T C G C T G G C C T  
SEQ. ID. NO. 36 G C A A G T A T G T T G G G C T C G C T G G C C T  
SEQ. ID. NO. 32 G C C A T C T G C C T G G C A C T T A T C T C G G

SEQ. ID. NO. 40 A G A A G G C C A G G G G A G T G C T C A A G T G  
SEQ. ID. NO. 46 A C A A T G T G C T C C C T C A T C G C G C T C T G  
SEQ. ID. NO. 36 A C A A T G T G C T C C C T C A T C G C G C T C T G  
SEQ. ID. NO. 32 G C C A G C T G C T C A T C G T G G T C G C C T G

SEQ. ID. NO. 40 T G A C A T T T C T G A T C T C T C A C T C A T T  
SEQ. ID. NO. 46 C A C G C T T T A T G C C T T C A A G A C T C G C  
SEQ. ID. NO. 36 C A C G C T T T A T G C C T T C A A G A C T C G C  
SEQ. ID. NO. 32 G C T G G T G G T G G A G G C A C C G G G C A C A

SEQ. ID. NO. 40 T G T T C A C T T G G A T A C A G T A T C C T C T  
SEQ. ID. NO. 46 A A G T G C C C C G A A A A C T T C A A C G A G G  
SEQ. ID. NO. 36 A A G T G C C C C G A A A A C T T C A A C G A G G  
SEQ. ID. NO. 32 G G C A A G G A G A C A G C C C C C G A A C G G C

SEQ. ID. NO. 40 T G A T G G T C A C T T G T A C T G T T T A T G C  
SEQ. ID. NO. 46 C C A A G T T C A T T G G C T T C A C C A T G T A  
SEQ. ID. NO. 36 C C A A G T T C A T T G G C T T C A C C A T G T A  
SEQ. ID. NO. 32 G G G A G G T G G T G A C A C T G C G C T G C A A

SEQ. ID. NO. 40 C A T T A A A A C G A G A G G T G T C C C A G A G  
SEQ. ID. NO. 46 C A C C A C C T G C A T C A T C T G G C T G G C A  
SEQ. ID. NO. 36 C A C C A C C T G C A T C A T C T G G C T G G C A  
SEQ. ID. NO. 32 C C A C C G C G A T G C A A G T A T G T T G G G C

SEQ. ID. NO. 40 A C T T T C A A T G A A G C C A A A C C T A T T G  
SEQ. ID. NO. 46 T T C C T G C C C A T C T T C T A T G T C A C C T  
SEQ. ID. NO. 36 T T C C T G C C C A T C T T C T A T G T C A C C T  
SEQ. ID. NO. 32 T C G C T G G C C T A C A A T G T G C T C C T C A

SEQ. ID. NO. 40 G A T T T A C C A T G T A T A C C A C C T G C A T  
SEQ. ID. NO. 46 C C A G T G A C T A C C G G G T A C A G A C C A C  
SEQ. ID. NO. 36 C C A G T G A C T A C C G G G T A C A G A C C A C  
SEQ. ID. NO. 32 T C G C G C T C T G C A C G C T T T A T G C C T T

SEQ. ID. NO. 40 C A T T T G G T T A G C T T T C A T C C C C A T C  
SEQ. ID. NO. 46 C A C C A T G T G C G T G T C A G T C A G C C T C  
SEQ. ID. NO. 36 C A C C A T G T G C G T G T C A G T C A G C C T C  
SEQ. ID. NO. 32 C A A T A C T C G C A A G T G C C C C G A A A A C

Figure 111

SEQ. ID. NO. 40 T T T T T G G T A C A G C C C A G T C A G C A G  
SEQ. ID. NO. 46 A G C G G C T C C G T G G T G C T T G G C T G C C  
SEQ. ID. NO. 36 A G C G G C T C C G T G G T G C T T G G C T G C C  
SEQ. ID. NO. 32 T T C A A C G A G G C C A A G T T C A T T G G C T

SEQ. ID. NO. 40 A A A A G A T G T A C A T C C A G A C A A C A A C  
SEQ. ID. NO. 46 T C T T T G C G C C C A A G G C T G C A C A T C A T  
SEQ. ID. NO. 36 T C T T T G C G C C C A A G G C T G C A C A T C A T  
SEQ. ID. NO. 32 T C A C C A T G T A C A C C A C C T G C A T C A T

SEQ. ID. NO. 40 A C T T A C T G T C T C C A T G A G T T T A A G T  
SEQ. ID. NO. 46 C C T C T T C C A G C C G C A G A A G A A C A C C  
SEQ. ID. NO. 36 C C T C T T C C A G C C G C A G A A G A A C A C C  
SEQ. ID. NO. 32 C T G G C T G G C A T T G T T G C C A T C T T C

SEQ. ID. NO. 40 G C T T C A G T A T C T C T G G G C A T G C T C T  
SEQ. ID. NO. 46 A T C G A G G G A G G T G C G T T G C A G C A C C G  
SEQ. ID. NO. 36 A T C G A G G G A G G T G C G T T G C A G C A C C G  
SEQ. ID. NO. 32 T A T G T C A C C T C C A G T G A C T A C C G G G

SEQ. ID. NO. 40 A T A T G C C C A A G G T T T A T A T A T A A T  
SEQ. ID. NO. 46 C A G C T C A C G C T T T C A A G G T G G C T G C  
SEQ. ID. NO. 36 C A G C T C A C G C T T T C A A G G T G G C T G C  
SEQ. ID. NO. 32 T A C A G A C C A C C A C C A T G T G C G T G T C

SEQ. ID. NO. 40 T T T T C A T C C A G A A C A G A A T A C C A T C  
SEQ. ID. NO. 46 C C G G G C C A C G C T G C G C C G C A G C A A C  
SEQ. ID. NO. 36 C C G G G C C A C G C T G C G C C G C A G C A A C  
SEQ. ID. NO. 32 A G T C A G C C T C A G C G G C T C C G T G G T G

SEQ. ID. NO. 40 G A G G A G G T G C G T T G C A G C A C C G C A G  
SEQ. ID. NO. 46 G T C T C C C G C A A G C G G T C C A G C A G C C  
SEQ. ID. NO. 36 G T C T C C C G C A A G C G G T C C A G C A G C C  
SEQ. ID. NO. 32 C T T G G C T G C C T C T T G C G C C C A A G C

SEQ. ID. NO. 40 C T C A C G C T T T C A A G G T G G C T G C C C G  
SEQ. ID. NO. 46 T T G G A G G C T C C A C G G G A T C C A C C C C  
SEQ. ID. NO. 36 T T G G A G G C T C C A C G G G A T C C A C C C C  
SEQ. ID. NO. 32 T G C A C A T C A T C C T C T T C C A G C C G C A

Figure 11m

SEQ. ID. NO. 40: G G C C A C G C T G C G C C G C A G C A A C G T C  
SEQ. ID. NO. 46: C T C C T C C T C C A T C A G C A G C A A G A G C  
SEQ. ID. NO. 36: C T C C T C C T C C A T C A G C A G C A A G A G C  
SEQ. ID. NO. 32: G A A G A A C G T G G T T A G C C A C C G G G C A

SEQ. ID. NO. 40: T C C C G C A A G C G G T C C A G C A G C C T T G  
SEQ. ID. NO. 46: A A C A G C G A A G A C C C A T T C C C A C A G C  
SEQ. ID. NO. 36: A A C A G C G A A G A C C C A T T C C C A C A G C  
SEQ. ID. NO. 32: C C C A C C A G C C G C T T G G C A G T G C T G

SEQ. ID. NO. 40: G A G G C T C C A C G G G A T C C A C C C C C T C  
SEQ. ID. NO. 46: C C G A G A G G G C A G A A G C A G C A G C A G C C  
SEQ. ID. NO. 36: C C G A G A G G G C A G A A G C A G C A G C A G C C  
SEQ. ID. NO. 32: C T G C C A G G G C C A G C T C C A G C C T T G G

SEQ. ID. NO. 40: C T C C T C C A T C A G C A G C A A G A G C A A C  
SEQ. ID. NO. 46: G C T G G C C C T A A C C C A G C A A G A G C A G  
SEQ. ID. NO. 36: G C T G G C C C T A A C C C A G C A A G A G C A G  
SEQ. ID. NO. 32: C C A A G G G T C T G G C T C C C A G T T T G T C

SEQ. ID. NO. 40: A G C G A A G A C C C A T T C C C A C A G C C C G  
SEQ. ID. NO. 46: C A G C A G C A A C G A T C T C A G C A G C A G C C  
SEQ. ID. NO. 36: C A G C A G C A G C C C C T G A C C C T C C C A C  
SEQ. ID. NO. 32: C C C A C T G T T T G C A A T G G C C G T G A G G

SEQ. ID. NO. 40: A G A G G G C A G A A G C A G C A G C A G C C C G T  
SEQ. ID. NO. 46: A G C A G C A A C G A T C T C A G C A G C A G C C  
SEQ. ID. NO. 36: A G C A G C A A C G A T C T C A G C A G C A G C C  
SEQ. ID. NO. 32: T G G T G G A C T C G A C A A C G T C A T C G C T

SEQ. ID. NO. 40: G G C C C T A A C C C A G C A A G A G C A G C A G  
SEQ. ID. NO. 46: C A G A T G C A A G G C A G A A G G T C A T C T T T  
SEQ. ID. NO. 36: C A G A T G C A A G G C A G A A G G T C A T C T T T  
SEQ. ID. NO. 32: T A T G A C T C T G G A G T C C A T C A T G G C G

SEQ. ID. NO. 40: C A G C A G C C C C T G A C C C T C C C A C A G C  
SEQ. ID. NO. 46: G G C A G C G G C A C G G T C A C C T T C T C A C  
SEQ. ID. NO. 36: G G C A G C G G C A C G G T C A C C T T C T C A C  
SEQ. ID. NO. 32: T G C T G C C T G A G C G A G G A G G C C A A G G

Figure 11n

SEQ. ID. NO. 40 A G C A A C G A T C T C A G C A G C A G C C C A G  
SEQ. ID. NO. 46 T G A G C T T T G A T G A G C C T C A G A A G A A  
SEQ. ID. NO. 36 T G A G C T T T G A T G A G C C T C A G A A G A A  
SEQ. ID. NO. 32 A A G C C C G G C G G A T C A A C G A C G A G A T

SEQ. ID. NO. 40 A T G C A A G C A G A A G G T C A T C T T T G G C  
SEQ. ID. NO. 46 C G C C A T G G C C C A C G G G A A T T C T A C G  
SEQ. ID. NO. 36 C G C C A T G G C C C A C G G G A A T T C T A C G  
SEQ. ID. NO. 32 C G A G C G G C A G C T C C G C A G G G A C A A G

SEQ. ID. NO. 40 A G C G G C A C G G T C A C C T T C T C A C T G A  
SEQ. ID. NO. 46 C A C C A G A A C T C C C T G G A G G C C C A G A  
SEQ. ID. NO. 36 C A C C A G A A C T C C C T G G A G G C C C A G A  
SEQ. ID. NO. 32 C G G G A C G C C C G C C C G G A G C T C A A G C

SEQ. ID. NO. 40 G C T T T G A T G A G C C T C A G A A G A A C G C  
SEQ. ID. NO. 46 A A A G C A G C G A T A C G C T G A C C C G A C A  
SEQ. ID. NO. 36 A A A G C A G C G A T A C G C T G A C C C G A C A  
SEQ. ID. NO. 32 T G C T G C T G C T C G G G A C A G G A G A G A G

SEQ. ID. NO. 40 C A T G G C C C A C G G G A A T T C T A C G C A C  
SEQ. ID. NO. 46 C C A G C C A T T A C T C C C G C T G C A G T G C  
SEQ. ID. NO. 36 C C A G C C A T T A C T C C C G C T G C A G T G C  
SEQ. ID. NO. 32 T G G C A A G A G T A C G T T T A T C A A G C A G

SEQ. ID. NO. 40 C A G A A C T C C C T G G A G G C C C A G A A A A  
SEQ. ID. NO. 46 G G G G A A A C G G A C T T A G A T C T G A C C G  
SEQ. ID. NO. 36 G G G G A A A C G G A C T T A G A T C T G A C C G  
SEQ. ID. NO. 32 A T G A G A A T C A T C C A T G G G T C A G G A T

SEQ. ID. NO. 40 G C A G C G A T A C G C T G A C C C G A C A C C A  
SEQ. ID. NO. 46 T C C A G G A A A C A G G T C T G C A A G G A C C  
SEQ. ID. NO. 36 T C C A G G A A A C A G G T C T G C A A G G A C C  
SEQ. ID. NO. 32 A C T C T G A T G A A G A T A A A A G G G G C T T

SEQ. ID. NO. 40 G C C A T T A C T C C C G C T G C A G T G C G G G  
SEQ. ID. NO. 46 T G T G G G T G G A G A C C A G C G G G C C A G A G  
SEQ. ID. NO. 36 T G T G G G T G G A G A C C A G C G G G C C A G A G  
SEQ. ID. NO. 32 C A C C A A G C T G G T G T A T C A G A A C A T C

Figure 11o

SEQ. ID. NO. 40 GAAACGGACTTAGATCTGACCGTCC  
SEQ. ID. NO. 46 GTGGAGGACCCCTGAAGAGTTGTCCC  
SEQ. ID. NO. 36 GTGGAGGACCCCTGAAGAGTTGTCCC  
SEQ. ID. NO. 32 TTACGGCCATGCAGGCCATGATCA

SEQ. ID. NO. 40 AGGAAACAGGTCTGCAAGGACCTGT  
SEQ. ID. NO. 46 CAGCACTTGTAGTGTCCAGTTACAC  
SEQ. ID. NO. 36 CAGCACTTGTAGTGTCCAGTTACAC  
SEQ. ID. NO. 32 GAGCCATGGACACACTCAAGATCCC

SEQ. ID. NO. 40 GGGTGGAGACCAAGCGGGCAGAGGTG  
SEQ. ID. NO. 46 GAGCTTTGTCAATCAGTGGTGGAGGC  
SEQ. ID. NO. 36 GAGCTTTGTCAATCAGTGGTGGAGGC  
SEQ. ID. NO. 32 ATACAAGTATGAGCACAAATAAGGCT

SEQ. ID. NO. 40 GAGGACCCCTGAAGAGTTGTCCCCAG  
SEQ. ID. NO. 46 AGCACTGTTACAGAAAAACGTAGTGA  
SEQ. ID. NO. 36 AGCACTGTTACAGAAAAACGTAGTGA  
SEQ. ID. NO. 32 CATGCACAAATTAGTTCGAGAAGTTG

SEQ. ID. NO. 40 CACTTGTAGTGTCCAGTTCACAGAG  
SEQ. ID. NO. 46 ATTCAAGCGGGCCATGACTCTGGAA  
SEQ. ID. NO. 36 ATTCAATGACTCTGGAGTCCATCAT  
SEQ. ID. NO. 32 ATGTGGAGAAGGTGTCTGCTTTGA

SEQ. ID. NO. 40 CTTTGTCAATCAGTGGTGGAGGCAGC  
SEQ. ID. NO. 46 GTCCATCAATGGCGTGCTGCCTGAGC  
SEQ. ID. NO. 36 GCGGTGCTGCCCTGAGCGAGGAGGCC  
SEQ. ID. NO. 32 GAATCCATATGTAGATGCAATAAAG

SEQ. ID. NO. 40 ACTGTACAGAAAAACGTAGTGAATT  
SEQ. ID. NO. 46 GAGGAGGGCAAGGAAGCCCCGGCGGA  
SEQ. ID. NO. 36 AAGGAAGCCCCGGGATCAACGACG  
SEQ. ID. NO. 32 AGTTTATGGAATGATCCCTGGAAATCC

SEQ. ID. NO. 40 CA-----  
SEQ. ID. NO. 46 TCAACGGACGGAGATCGAGCGGGAGCT  
SEQ. ID. NO. 36 AGATCGAGCGGGAGCTCCGCAGGGAA  
SEQ. ID. NO. 32 AGGAATGCTATGATAGACGACGAGA

Figure 11p

SEQ. ID. NO. 40

SEQ. ID. NO. 46 C C G C A G G G A C A A A G C G G G A C G C C C G C

SEQ. ID. NO. 36 C A A G C G G G A C G C C C G C C G G G A G C T C

SEQ. ID. NO. 32 A T A T C A A T T A T C T G A C T C T A C C A A A

SEQ. ID. NO. 40

SEQ. ID. NO. 46 C G G G A G C T C A A G C T G C T G C T G C T C G

SEQ. ID. NO. 36 A A G C T G C T G C T G C T C G G G A C A G G A G

SEQ. ID. NO. 32 T A C T A T C T T A A T G A C T T G G A C C G C G

SEQ. ID. NO. 40

SEQ. ID. NO. 46 G G A C A G G A G A G A G T G G C A A G A G T A C

SEQ. ID. NO. 36 A G A G T G G C A A G A G T A C G T T A T C A A

SEQ. ID. NO. 32 T A G C T G A C C C T G C C T A C C T G C C T A C

SEQ. ID. NO. 40

SEQ. ID. NO. 46 G T T T A T C A A G C A G A T G A G A A T C A T C

SEQ. ID. NO. 36 G C A G A T G A G A A T C A T C C A T G G G T C A

SEQ. ID. NO. 32 G C A A C A A G A T G T G C T T A G A G T T C G A

SEQ. ID. NO. 40

SEQ. ID. NO. 46 C A T G G G T C A G G A T A C T C T G A T G A A G

SEQ. ID. NO. 36 G G A T A C T C T G A T G A A G A T A A A A G G G

SEQ. ID. NO. 32 G T C C C C A C C A C A G G G A T C A T C G A A T

SEQ. ID. NO. 40

SEQ. ID. NO. 46 T C C G C A G G G A C A A A G C G G G A C G C C C

SEQ. ID. NO. 36 G T A A A A A G G G G C T T C A C C A A G C T G G T

SEQ. ID. NO. 32 G C T T C A C C A A G C T G G T G T A T C A G A A

SEQ. ID. NO. 32 A C C C C T T G A C T T A C A A A G T G T C A T

SEQ. ID. NO. 40

SEQ. ID. NO. 46 C C G G G A G C T C A A G C T G C T G C T G C T C

SEQ. ID. NO. 36 G T A T C A G A A C A T C T T C A C G G C C A T G

SEQ. ID. NO. 32 T T T C A G A A T G G T C G A T G T A G G G G G C

SEQ. ID. NO. 40

SEQ. ID. NO. 46 G G G A C A G G A G A G A G T G G C A A G A G T A

SEQ. ID. NO. 36 C A G G C C A T G A T C A G A G C C A T G G A C A

SEQ. ID. NO. 32 A T C A G A G C C A T G G A C A C A C T C A A G A

SEQ. ID. NO. 32 C A A A G G T C A G A G A G A A G A A A A T G G A

Figure 11q

SEQ. ID. NO. 40 CG T T T A T C A A G C A G A T G A G A A T C A T  
SEQ. ID. NO. 46 C A C T C A A G A T C C C A T A C A A G T A T G A  
SEQ. ID. NO. 36 T C C C A T A C A A G T A T G A G G C A C A A T A A  
SEQ. ID. NO. 32 T A C A C T G C T T G A A A A T G T C A C C T C

SEQ. ID. NO. 40 C C A T G G G T C A G G A T A C T C T G A T G A A  
SEQ. ID. NO. 46 G C A C A A T A A G G G C T C A T G C A C A A T T A  
SEQ. ID. NO. 36 G G C T C A T G C A C A A T T A G T T C G A G A A  
SEQ. ID. NO. 32 T A T C A T G T T T C T A G T A G C G C T T A G T

SEQ. ID. NO. 40 G A T A A A A G G G G C T T C A C C A A G C T G G  
SEQ. ID. NO. 46 G T T C G A G A A G T T G A T G T G G A G A A G G  
SEQ. ID. NO. 36 G T T G A T G T G G A G A A G G T G T C T G C T T  
SEQ. ID. NO. 32 G A A T A T G A T C A A G T T C T C G T G G A G T

SEQ. ID. NO. 40 T G T A T C A G A A C A T C T T C A C G G C C A T  
SEQ. ID. NO. 46 T G T C T G C T T T G A G A A T C C A T A T G T  
SEQ. ID. NO. 36 T T G A G A A T C C A T A T G T A G A T G C A A T  
SEQ. ID. NO. 32 C A G A C A A T G A G A A C C G A A T G G A G G A

SEQ. ID. NO. 40 G C A G G C C A T G A T C A G A G C C A T G G A C  
SEQ. ID. NO. 46 A G A T G C A A T A A A G A G T T T A T G G A A T  
SEQ. ID. NO. 36 A A A G A G T T T A T G G A A T G A T C C T G G A  
SEQ. ID. NO. 32 A A G C A A G G C T C T C T T A G A A C A A T T

SEQ. ID. NO. 40 A C A C T C A A G A T C C C A T A C A A G T A T G  
SEQ. ID. NO. 46 G A T C C T G G A A T C C A G G A A T G C T A T G  
SEQ. ID. NO. 36 A T C C A G G A A T G C T A T G A T A G A C G A C  
SEQ. ID. NO. 32 A T C A C A T A C C C T G G T T C C A G A A C T

SEQ. ID. NO. 40 A G C A C A A T A A G G C T C A T G C A C A A T T  
SEQ. ID. NO. 46 A T A G A C G G A C G G A A T A T C A A T T A T C  
SEQ. ID. NO. 36 G A G A A T A T C A A T T A T C T G A C T C T A C  
SEQ. ID. NO. 32 C C T C G G T T A T T C T G T T C T T A A A C A A

SEQ. ID. NO. 40 A G T T C G A G A A G T T G A T G T G G A G A A G  
SEQ. ID. NO. 46 T G A C T C T A C C A A A T A C T A T C T T A A T  
SEQ. ID. NO. 36 C A A A T A C T A T C T T A A T G A C T T G G A C  
SEQ. ID. NO. 32 G A A A G A T C T C T A G A G G G A G A A A T C

SEQ. ID. NO. 40 GTGTCCTGCTTTGAGAATCCATATG  
SEQ. ID. NO. 46 GACTTGGACCGCGTAGCTGACCCCTG  
SEQ. ID. NO. 36 CGCGTAGCTGACCCCTGCCCTACCTGC  
SEQ. ID. NO. 32 ATGTATTCCCATCTAGTCGACTACT

SEQ. ID. NO. 40 TAGATGCAATAAAGAGTTATGGAA  
SEQ. ID. NO. 46 CCTACCTGCCTACGCAACAAGATGT  
SEQ. ID. NO. 36 CTACGCAACAAAGATGTGCTTAGAGT  
SEQ. ID. NO. 32 TCCCAGAAATATGATGGACCCAGAG

SEQ. ID. NO. 40 TGATCCTGGAATCCAGGAATGCTAT  
SEQ. ID. NO. 46 GCTTAGAGTTCGAGTCACCAACAC  
SEQ. ID. NO. 36 TCGAGTCCCCACCAACAGGGATCATT  
SEQ. ID. NO. 32 AGATGCCAGGGCAGCCGAGAAATTG

SEQ. ID. NO. 40 GATAGACGGACGGAGAATATCAATTAT  
SEQ. ID. NO. 46 GGGATCATCGAATAACCCCTTTGACT  
SEQ. ID. NO. 36 GAATACCCCTTTGACTTACAAAGTG  
SEQ. ID. NO. 32 ATTCTGAAGATGTTCGTGGACCTGA

SEQ. ID. NO. 40 CTGACTCTACCAAAATAC TATCTTAA  
SEQ. ID. NO. 46 TACAAAGTGTCAATTTCAGAAATGGT  
SEQ. ID. NO. 36 TCATTTCAAGAATGGTCGATGTAGG  
SEQ. ID. NO. 32 ACCCAGACAGTGACAAATTATCTA

SEQ. ID. NO. 40 TGACTTGGACCGCGTAGCTGACCCCT  
SEQ. ID. NO. 46 CGATGTTAGGGGGCCAAAGGTCAAGAG  
SEQ. ID. NO. 36 GGGCCAAAGGTCAAGAGAGAAGAAAAA  
SEQ. ID. NO. 32 CTCCCACTTCACGTGCGCCACAGAC

SEQ. ID. NO. 40 GCCTACCTGCCCTACGCAACAAGATG  
SEQ. ID. NO. 46 AGAAGAAAAATGGATACACTGCTTTG  
SEQ. ID. NO. 36 TGGATACACTGCTTTGAAAAATGTCA  
SEQ. ID. NO. 32 ACCGAGAAATATCCGCTTGTCTTTG

SEQ. ID. NO. 40 TGCTTAGAGTTCGAGTCACCAAC  
SEQ. ID. NO. 46 AAAATGTCACCTCTATCATGTTTCT  
SEQ. ID. NO. 36 CCTCTATCATGTTCTAGTAGCGCT  
SEQ. ID. NO. 32 CTGCCGTCAAGGACACCACTCCCTCCA

Figure 11s

SEQ. ID. NO. 40 A G G G A T C A T C G A A T A C C C C T T G A C  
SEQ. ID. NO. 46 A G T A G C G C T T A G T G A A T A T G A T C A A  
SEQ. ID. NO. 36 T A G T G A A T A T G A T C A A G T T C T C G T G  
SEQ. ID. NO. 32 G T T G A A C C T G A A G G A C T G C G G T C T G

SEQ. ID. NO. 40 T T A C A A A G T G T C A T T T C A G A A T G G  
SEQ. ID. NO. 46 G T T C T C G T G G A G T C A G A C A A T G A G A  
SEQ. ID. NO. 36 G A G T C A G A C A A T G A G A A C C G A A T G G  
SEQ. ID. NO. 32 T T C T A A

SEQ. ID. NO. 40 T C G A T G T A G G G G G C C A A A G G T C A G A  
SEQ. ID. NO. 46 A C C G A A T G G A G G G A A A G C A A G G C T C T  
SEQ. ID. NO. 36 A G G A A A G C A A G G C T C T C T T A G A A C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G A G A A G A A A A T G G A T A C A C T G C T T T  
SEQ. ID. NO. 46 C T T T A G A A C A A T T A T C A C A T A C C C C  
SEQ. ID. NO. 36 A A T T A T C A C A T A C C C C T G G T T C C A G  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G A A A A T G T C A C C T C T A T C A T G T T T C  
SEQ. ID. NO. 46 T G G T T C C A G A A C T C C T C G G T T A T T C  
SEQ. ID. NO. 36 A A C T C C T C G G T T A T T C T G T T C T T A A  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 T A G T A G C G C T T A G T G A A T A T G A T C A  
SEQ. ID. NO. 46 T G T T C T T A A A C A A G A A A A G A T C T T C T  
SEQ. ID. NO. 36 A C A A G A A A G A T C T T C T A G A G G G A G A A  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 A G T T C T C G T G G A G T C A G A C A A T G A G  
SEQ. ID. NO. 46 A G A G G G A G A A A A T C A T G T A T T C C C A T  
SEQ. ID. NO. 36 A A T C A T G T A T T C C C A T C T A G T C G A C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 A A C C G A A T G G A G G G A A A G C A A G G C T C  
SEQ. ID. NO. 46 C T A G T C G A C T A C T T C C C A G A A T A T G  
SEQ. ID. NO. 36 T A C T T C C C A G A A T A T G A T G G A C C C C  
SEQ. ID. NO. 32

Figure 11t

SEQ. ID. NO. 40 T C T T T A G A A A C A A T T A T C A C A T A C C C  
SEQ. ID. NO. 46 A T G G A C C C C A G A G A G A T G C C C A G G C  
SEQ. ID. NO. 36 A G A G A G A T G C C C A G G C A G C C C G A G A  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 C T G G T T C C A G A A C T C C T C G G T T A T T  
SEQ. ID. NO. 46 A G C C C G A G A A T T C A T T C T G A A G A T G  
SEQ. ID. NO. 36 A T T C A T T C T G A A G A T G T T C G T G G A C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 C T G T T C T T A A A C A A G A A A G A T C T T C  
SEQ. ID. NO. 46 T T C G T G G A C C T G A A C C C A G A C A G T G  
SEQ. ID. NO. 36 C T G A A C C C A G A C A G T G A C A A A A T T A  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 T A G A G G A G A A A A T C A T G T A T T C C C A  
SEQ. ID. NO. 46 A C A A A A T T A T C T A C T C C C A C T T C A C  
SEQ. ID. NO. 36 T C T A C T C C C A C T T C A C G T G C G C C A C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 T C T A G T C G A C T A C T T C C C A G A A A T A T  
SEQ. ID. NO. 46 G T G C G C C A C A G A C A C C G A G A A T A T C  
SEQ. ID. NO. 36 A G A C A C C G A G A A T A T C C G C T T T G T C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G A T G G A C C C C A G A G A G A T G C C C A G G  
SEQ. ID. NO. 46 C G C T T T G T C T T T G C T G C C G T C A A G G  
SEQ. ID. NO. 36 T T T G C T G C C G T C A A G G A C A C C A T C C  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 C A G C C C G A G A A T T C A T T C T G A A G A T  
SEQ. ID. NO. 46 A C A C C A T C C T C C A G T T G A A C C T G A A  
SEQ. ID. NO. 36 T C C A G T T G A A C C T G A A G G A C T G C G G  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G T T C G T G G A C C T G A A C C C A G A C A G T  
SEQ. ID. NO. 46 G G A C T G C G G T C T G T T C T A A T T G T G C  
SEQ. ID. NO. 36 T C T G T T C T A A  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G A C A A A A T T A T C T A C T C C C A C T T C A  
SEQ. ID. NO. 46 C T C C T A G A C A C C C G C C T G C C C T T C  
SEQ. ID. NO. 36  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 C G T G C G C C A C A G A C A C C G A G A A T A T  
SEQ. ID. NO. 46 C C T G G T  
SEQ. ID. NO. 36  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 C C G C T T T G T C T T G C T G C C G T C A A G  
SEQ. ID. NO. 46  
SEQ. ID. NO. 36  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 G A C A C C A T C C T C C A G T T G A A C C T G A  
SEQ. ID. NO. 46  
SEQ. ID. NO. 36  
SEQ. ID. NO. 32

SEQ. ID. NO. 40 A G G A C T G C G G T C T G T T C T A A  
SEQ. ID. NO. 46  
SEQ. ID. NO. 36  
SEQ. ID. NO. 32

ClustalW Formatted Alignments

SEQ. ID. NO. 41 M V C E G K R S A S C P C F F L L T A K F Y W I L  
SEQ. ID. NO. 47 M G S L L A L P A L L L W G A V A E G P A K K V  
SEQ. ID. NO. 37 M G S L L A L P A L L L W G A V A E G P A K K V  
SEQ. ID. NO. 33 M A F Y S C C W V L L A L T W H T S A Y G P D Q R

SEQ. ID. NO. 41 T M M Q R T H S Q E Y A H S I R V D G D I I L G G  
SEQ. ID. NO. 47 L T L E G D L V L G G L F P V H Q K G G P A E D C  
SEQ. ID. NO. 37 L T L E G D L V L G G L F P V H Q K G G P A E D C  
SEQ. ID. NO. 33 A Q K K G D I I L G G L F P I H F G V A A K D Q D

SEQ. ID. NO. 41 L F P V H A K G E R G V P C G E L K K E K G I H R  
SEQ. ID. NO. 47 G P V N E H R G I Q R L E A M L F A L D R I N R D  
SEQ. ID. NO. 37 G P V N E H R G I Q R L E A M L F A L D R I N R D  
SEQ. ID. NO. 33 L K S R P E S V E C I R Y N F R G F R W L Q A M I

SEQ. ID. NO. 41 L E A M L Y A I D Q I N K D P D L L S N I T L G V  
SEQ. ID. NO. 47 P H L L P G V R L G A H I L D S C S K D T H A L E  
SEQ. ID. NO. 37 P H L L P G V R L G A H I L D S C S K D T H A L E  
SEQ. ID. NO. 33 F A I E E I N S S P A L L P N L T L G Y R I F D T

SEQ. ID. NO. 41 R I L D T C S R D T Y A L E Q S L T F V Q A L I E  
SEQ. ID. NO. 47 Q A L D F V R A S L S R G A D G S R H I C P D G S  
SEQ. ID. NO. 37 Q A L D F V R A S L S R G A D G S R H I C P D G S  
SEQ. ID. NO. 33 C N T V S K A L E A T L S F V A Q N K I D S L N L

SEQ. ID. NO. 41 K D A S D V K C A N G D P P I F T K P D K I S G V  
SEQ. ID. NO. 47 Y A T H G D A P T A I T G V I G G S Y S D V S I Q  
SEQ. ID. NO. 37 Y A T H G D A P T A I T G V I G G S Y S D V S I Q  
SEQ. ID. NO. 33 D E F C N C S E H I P S T I A V V G A T G S G V S

SEQ. ID. NO. 41 I G A A A S S V S I M V A N I L R L F K I P Q I S  
SEQ. ID. NO. 47 V A N L L R L F Q I P Q I S Y A S T S A K L S D K  
SEQ. ID. NO. 37 V A N L L R L F Q I P Q I S Y A S T S A K L S D K  
SEQ. ID. NO. 33 T A V A N L L G L F Y I P Q V S Y A S S S R L L S

SEQ. ID. NO. 41 Y A S T A P E L S D N T R Y D F F S R V V P P D S  
SEQ. ID. NO. 47 S R Y D Y F A R T V P P D F F Q A K A M A E I L R  
SEQ. ID. NO. 37 S R Y D Y F A R T V P P D F F Q A K A M A E I L R  
SEQ. ID. NO. 33 N K N Q F K S F L R T I P N D E H Q A T A M A D I

SEQ. ID. NO. 41 Y Q A Q A M V D I V T A L G W N Y V S T L A S E G  
SEQ. ID. NO. 47 F F N W T Y V S T V A S E G D Y G E T G I E A F E  
SEQ. ID. NO. 37 F F N W T Y V S T V A S E G D Y G E T G I E A F E  
SEQ. ID. NO. 33 I E Y F R W N W V G T I A A D D D Y G R P G I E K

SEQ. ID. NO. 41 N Y G E S G V E A F T Q I S R E I G G V C I A Q S  
SEQ. ID. NO. 47 L E A R A R N I C V A T S E K V G R A M S R A A F  
SEQ. ID. NO. 37 L E A R A R N I C V A T S E K V G R A M S R A A F  
SEQ. ID. NO. 33 F R E E A E E R D I C I D F S E L I S Q Y S D E E

SEQ. ID. NO. 41 Q K I P R E P R P G E F E K I I K R L L E T P N A  
SEQ. ID. NO. 47 E G V V R A L L Q K P S A R V A V L F T R S E D A  
SEQ. ID. NO. 37 E G V V R A L L Q K P S A R V A V L F T R S E D A  
SEQ. ID. NO. 33 E I Q H V V E V I Q N S T A K V I V V F S S G P D

SEQ. ID. NO. 41 R A V I M F A N E D D I R R I L E A A K K L N Q S  
SEQ. ID. NO. 47 R E L L A A S Q R L N A S F T W V A S D G W G A L  
SEQ. ID. NO. 37 R E L L A A S Q R L N A S F T W V A S D G W G A L  
SEQ. ID. NO. 33 L E P L I K E I V R R N I T G K I W L A S E A W A

SEQ. ID. NO. 41 G H F L W I G S D S W G S K I A P V Y Q Q E E I A  
SEQ. ID. NO. 47 E S V V A G S E G A A E G A I T I E L A S Y P I S  
SEQ. ID. NO. 37 E S V V A G S E G A A E G A I T I E L A S Y P I S  
SEQ. ID. NO. 33 S S S L I A M P Q Y F H V V G G T I G F A L K A G

SEQ. ID. NO. 41 E G A V T I L P K R A S I D G F D R Y F R S R T L  
SEQ. ID. NO. 47 D F A S Y F Q S L D P W N N S R N P W F R E F W E  
SEQ. ID. NO. 37 D F A S Y F Q S L D P W N N S R N P W F R E F W E  
SEQ. ID. NO. 33 Q I P G F R E F L K K V H P R K S V H N G F A K E

SEQ. ID. NO. 41 A N N R R N V W F A E F W E E N F G C K L G S H G  
SEQ. ID. NO. 47 Q R F R C S F R Q R D C A A H S L R A V P F E Q E  
SEQ. ID. NO. 37 Q R F R C S F R Q R D C A A H S L R A V P F E Q E  
SEQ. ID. NO. 33 F W E E T F N C H L Q E G A K G P L P V D T F L R

SEQ. ID. NO. 41 K R N S H I K K C T G L E R I A R D S S Y E Q E G  
SEQ. ID. NO. 47 S K I M F V V N A V Y A M A H A L H N M H R A L C  
SEQ. ID. NO. 37 S K I M F V V N A V Y A M A H A L H N M H R A L C  
SEQ. ID. NO. 33 G H E E S G D R F S N S S T A F R P L C T G D E N.

SEQ. ID. NO. 41 KVQFVIDAVYSMAYALHNMHKDLC  
SEQ. ID. NO. 47 PNTTRLCDAMRPVNGRRLYKDFVLN  
SEQ. ID. NO. 37 PNTTRLCDAMRPVNGRRLYKDFVLN  
SEQ. ID. NO. 33 ISSVETPYIDYTHLRISYNVYLVY

SEQ. ID. NO. 41 GYIGLCPRMSTIDGKEELLGYIRAVN  
SEQ. ID. NO. 47 VKFDAPPFRPADTHNEVRFDRGDG  
SEQ. ID. NO. 37 VKFDAPPFRPADTHNEVRFDRGDG  
SEQ. ID. NO. 33 SIAHALQDIYTCLPGRGLFTNGSCA

SEQ. ID. NO. 41 FNGSAGTPVTFNENGDAPGRYDIFQ  
SEQ. ID. NO. 47 GRYNIFTYLRAGSGRYRYQKVGYWA  
SEQ. ID. NO. 37 GRYNIFTYLRAGSGRYRYQKVGYWA  
SEQ. ID. NO. 33 DIKKVEAWQV р LKHRLNFTNNMGE

SEQ. ID. NO. 41 YQITNKSTEYKVIGHWTNQLHLKVE  
SEQ. ID. NO. 47 EGLTLDTSLIPWASPSAGPLPASRC  
SEQ. ID. NO. 37 EGLTLDTSLIPWASPSAGPLPASRC  
SEQ. ID. NO. 33 QVTFDECGLYGNYSIINWHLSPED

SEQ. ID. NO. 41 DMQWAHREHTHPASV р CSLPCKPGER  
SEQ. ID. NO. 47 SEPCLQNEVKSVQPGEVCCWLCIPC  
SEQ. ID. NO. 37 SEPCLQNEVKSVQPGEVCCWLCIPC  
SEQ. ID. NO. 33 GSIVFKEVGYYNYAKKGERLFINE

SEQ. ID. NO. 41 KKTVKGVPCCWHCERCEGYNYQVDE  
SEQ. ID. NO. 47 QPYEYRLDEFTCADCGLGYWPNASL  
SEQ. ID. NO. 37 QPYEYRLDEFTCADCGLGYWPNASL  
SEQ. ID. NO. 33 EKILWSGFREVPFNSNCSDCLAGT

SEQ. ID. NO. 41 LSCELCPLDQRPNMNR TGCQLIPII  
SEQ. ID. NO. 47 TGC FELPQEYIRWGDAWA VGPVTIA  
SEQ. ID. NO. 37 TGC FELPQEYIRWGDAWA VGPVTIA  
SEQ. ID. NO. 33 RKGIIIEGEPTCCFECVECPDGEYSD

SEQ. ID. NO. 41 KLEWHSPWAVV PVFVAILGIIATTF  
SEQ. ID. NO. 47 CLGALATLFVLGVFVRHNATPVVK  
SEQ. ID. NO. 37 CLGALATLFVLGVFVRHNATPVVK  
SEQ. ID. NO. 33 ETDASACNKCPDDFWSENHTSCFE

SEQ. ID. NO. 41 V I V T F V R Y N D T P I V R A S G R E L S Y V L  
SEQ. ID. NO. 47 S G R E L C Y I L L G G V F L C Y C M T F I F I A  
SEQ. ID. NO. 37 S G R E L C Y I L L G G V F L C Y C M T F I F I A  
SEQ. ID. NO. 33 L P Q E Y I R W G D A W A Y G P Y T I A C L G A L

SEQ. ID. NO. 41 L T G I F L C Y S I T F L M I A A P D T I I C S F  
SEQ. ID. NO. 47 K P S T A V C T L R R L G L G T A F S V C Y S A L  
SEQ. ID. NO. 37 K P S T A V C T L R R L G L G T A F S V C Y S A L  
SEQ. ID. NO. 33 A T L F V L G V F V R H N A T P V V K A S G R E L

SEQ. ID. NO. 41 R R V F L G L G M C F S Y A A L L T K T N R I H R  
SEQ. ID. NO. 47 L T K T N R I A R I F G G A R E G A Q R P R F I S  
SEQ. ID. NO. 37 L T K T N R I A R I F G G A R E G A Q R P R F I S  
SEQ. ID. NO. 33 C Y I L L G G V F L C Y C M T F I F I A K P S T A

SEQ. ID. NO. 41 I F E Q G K K S V T A P K F I S P A S Q L V I T F  
SEQ. ID. NO. 47 P A S Q V A I C L A L I S G Q L L I V V A W L V V  
SEQ. ID. NO. 37 P A S Q V A I C L A L I S G Q L L I V V A W L V V  
SEQ. ID. NO. 33 V C T L R R L G L G T A F S V C Y S A L L T K T N

SEQ. ID. NO. 41 S L I S V Q L L G V F V W F V V D P P H I I I D Y  
SEQ. ID. NO. 47 E A P G T G K E T A P E R R E V V V T L R C N H R D  
SEQ. ID. NO. 37 E A P G T G K E T A P E R R E V V V T L R C N H R D  
SEQ. ID. NO. 33 R I A R I F G G A R E G A Q R P R F I S P A S Q V

SEQ. ID. NO. 41 G E Q R T L D P E K A R G V L K C D I S D L S L I  
SEQ. ID. NO. 47 A S M L G S L A Y N V L L I A L C T L Y A F K T R  
SEQ. ID. NO. 37 A S M L G S L A Y N V L L I A L C T L Y A F K T R  
SEQ. ID. NO. 33 A I C L A L I S G Q L L I V V A W L V V E A P G T

SEQ. ID. NO. 41 C S L G Y S I L L M V T C T V Y A I K T R G V P E  
SEQ. ID. NO. 47 K C P E N F N E A K F I G F T M Y T T C I I W L A  
SEQ. ID. NO. 37 K C P E N F N E A K F I G F T M Y T T C I I W L A  
SEQ. ID. NO. 33 G K E T A P E R R E V V V T L R C N H R D A S M L G

SEQ. ID. NO. 41 T P N E A K P I G F T M Y T T C I I W L A F I P I  
SEQ. ID. NO. 47 F L P I F Y V T S S D Y R V Q T T T M C V S V S L  
SEQ. ID. NO. 37 F L P I F Y V T S S D Y R V Q T T T M C V S V S L  
SEQ. ID. NO. 33 S L A Y N V L L I A L C T L Y A F N T R K C P E N

Figure 12d

SEQ. ID. NO. 41 F F G T A Q S A E K M Y I Q T T T L T V S M S L S  
SEQ. ID. NO. 47 S G S V V L G C L F A P K L H I I I L F Q P Q K N T  
SEQ. ID. NO. 37 S G S V V L G C L F A P K L H I I I L F Q P Q K N T  
SEQ. ID. NO. 33 F N E A K F I G F T M Y T T C I I W L A L L P I F

SEQ. ID. NO. 41 A S V S L G M L Y M P K V Y I I I F H P E Q N T I  
SEQ. ID. NO. 47 I E E V R C S T A A H A F K V A A R A T L R R S N  
SEQ. ID. NO. 37 I E E V R C S T A A H A F K V A A R A T L R R S N  
SEQ. ID. NO. 33 Y V T S S D Y R V Q T T T M C V S V S L S G S V V

SEQ. ID. NO. 41 E E V R C S T A A H A F K V A A R A T L R R S N V  
SEQ. ID. NO. 47 V S R K R S S S L G G S T G S T P S S S I S S K S  
SEQ. ID. NO. 37 V S R K R S S S L G G S T G S T P S S S I S S K S  
SEQ. ID. NO. 33 L G C L F A P K L H I I L F Q P Q K N V V S H R A

SEQ. ID. NO. 41 S R K R S S S L G G S T G S T P S S S I S S K S N  
SEQ. ID. NO. 47 N S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q  
SEQ. ID. NO. 37 N S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q  
SEQ. ID. NO. 33 P T S R F G S A A A R A S S S L G Q G S G S Q F V

SEQ. ID. NO. 41 S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q Q  
SEQ. ID. NO. 47 Q Q Q P L T L P Q Q Q R S Q Q Q P R C K Q K V I F  
SEQ. ID. NO. 37 Q Q Q P L T L P Q Q Q R S Q Q Q P R C K Q K V I F  
SEQ. ID. NO. 33 P T V C N G R E V V D S T T S S L M T L E S I M A

SEQ. ID. NO. 41 Q Q P L T L P Q Q Q R S Q Q Q P R C K Q K V I F G  
SEQ. ID. NO. 47 G S G T V T F S L S F D E P Q K N A M A H G N S T  
SEQ. ID. NO. 37 G S G T V T F S L S F D E P Q K N A M A H G N S T  
SEQ. ID. NO. 33 C C L S E E A K E A R R I N D E I E R Q L R R D K

SEQ. ID. NO. 41 S G T V T F S L S F D E P Q K N A M A H G N S T H  
SEQ. ID. NO. 47 H Q N S L E A Q K S S D T L T R H Q P L L P L Q C  
SEQ. ID. NO. 37 H Q N S L E A Q K S S D T L T R H Q P L L P L Q C  
SEQ. ID. NO. 33 R D A R R E L K L L L G T G E S G K S T F I K Q

SEQ. ID. NO. 41 Q N S L E A Q K S S D T L T R H Q P L L P L Q C G  
SEQ. ID. NO. 47 G E T D L D L T V Q E T G L Q G P V G G D Q R P E  
SEQ. ID. NO. 37 G E T D L D L T V Q E T G L Q G P V G G D Q R P E  
SEQ. ID. NO. 33 M R I I H G S G Y S D E D K R G F T K L V Y Q N I

SEQ. ID. NO. 41 E T D L D L T V Q E T G L Q G P V G G D Q R P E V  
SEQ. ID. NO. 47 V E D P E E L S P A L V V S S S Q S F V I S G G G  
SEQ. ID. NO. 37 V E D P E E L S P A L V V S S S Q S F V I S G G G  
SEQ. ID. NO. 33 F T A M Q A M I R A M D T L K I P Y K Y E H N K A

SEQ. ID. NO. 41 E D P E E L S P A L V V S S S Q S F V I S G G G S  
SEQ. ID. NO. 47 S T V T E N V V N S A A A M T L E S I M A C C L S  
SEQ. ID. NO. 37 S T V T E N V V N S M T L E S I M A C C L S E E A  
SEQ. ID. NO. 33 H A Q L V R E V D V E K V S A F E N P Y V D A I K

SEQ. ID. NO. 41 T V T E N V V N S M T L E S I M A C C L S E E A K  
SEQ. ID. NO. 47 E E A K E A R R I N D E I E R Q L R R D K R D A R  
SEQ. ID. NO. 37 K E A R R I N D E I E R Q L R R D K R D A R R E L  
SEQ. ID. NO. 33 S L W N D P G I Q E C Y D R R R E Y Q L S D S T K

SEQ. ID. NO. 41 E A R R I N D E I E R Q L R R D K R D A R R E L K  
SEQ. ID. NO. 47 R E L K L L L G T G E S G K S T F I K Q M R I I  
SEQ. ID. NO. 37 K L L L L G T G E S G K S T F I K Q M R I I H G S  
SEQ. ID. NO. 33 Y Y L N D L D R V A D P A Y L P T Q Q D V L R V R

SEQ. ID. NO. 41 L L L L G T G E S G K S T F I K Q M R I I H G S G  
SEQ. ID. NO. 47 H G S G Y S D E D K R G F T K L V Y Q N I F T A M  
SEQ. ID. NO. 37 G Y S D E D K R G F T K L V Y Q N I F T A M Q A M  
SEQ. ID. NO. 33 Y P T T G I I E Y P F D L Q S V I F R M V D V G G

SEQ. ID. NO. 41 Y S D E D K R G F T K L V Y Q N I F T A M Q A M I  
SEQ. ID. NO. 47 Q A M I R A M D T L K I P Y K Y E H N K A H A Q L  
SEQ. ID. NO. 37 I R A M D T L K I P Y K Y E H N K A H A Q L V R E  
SEQ. ID. NO. 33 Q R S E R R K W I H C F E N Y T S I M F L V A L S

SEQ. ID. NO. 41 R A M D T L K I P Y K Y E H N K A H A Q L V R E V  
SEQ. ID. NO. 47 V R E V D V E K V S A F E N P Y V D A I K S L W N  
SEQ. ID. NO. 37 V D V E K V S A F E N P Y V D A I K S L W N D P G  
SEQ. ID. NO. 33 E Y D Q V L V E S D N E N R M E E S K A L F R T I

SEQ. ID. NO. 41 D V E K V S A F E N P Y V D A I K S L W N D P G I  
SEQ. ID. NO. 47 D P G I Q E C Y D R R R E Y Q L S D S T K Y Y L N  
SEQ. ID. NO. 37 I Q E C Y D R R R E Y Q L S D S T K Y Y L N D L D  
SEQ. ID. NO. 33 I T Y P W F Q N S S V I L F L N K K D L L E E K I

SEQ. ID. NO. 41 Q E C Y D R R R E Y Q L S D S T K Y Y L N D L D R  
SEQ. ID. NO. 47 D L D R V A D P A Y L P T Q Q D V L R V R V P T T  
SEQ. ID. NO. 37 R V A D P A Y L P T Q Q D V L R V R V P T T G I I  
SEQ. ID. NO. 33 M Y S H L V D Y F P E Y D G P Q R D A Q A A R E F

SEQ. ID. NO. 41 V A D P A Y L P T Q Q D V L R V R V P T T G I I E  
SEQ. ID. NO. 47 G I I E Y P F D L Q S V I F R M V D V G G Q R S E  
SEQ. ID. NO. 37 E Y P F D L Q S V I F R M V D V G G Q R S E R R K  
SEQ. ID. NO. 33 I L K M F V D L N P D S D K I I Y S H F T C A T D

SEQ. ID. NO. 41 Y P F D L Q S V I F R M V D V G G Q R S E R R K W  
SEQ. ID. NO. 47 R R K W I H C F E N V T S I M F L V A L S E Y D Q  
SEQ. ID. NO. 37 W I H C F E N V T S I M F L V A L S E Y D Q V L V  
SEQ. ID. NO. 33 T E N I R F V F A A V K D T I L Q L N L K D C G L

SEQ. ID. NO. 41 I H C F E N V T S I M F L V A L S E Y D Q V L V E  
SEQ. ID. NO. 47 V L V E S D N E N R M E E S K A L F R T I I T Y P  
SEQ. ID. NO. 37 E S D N E N R M E E S K A L F R T I I T Y P W F Q  
SEQ. ID. NO. 33 F

SEQ. ID. NO. 41 S D N E N R M E E S K A L F R T I I T Y P W F Q N  
SEQ. ID. NO. 47 W F Q N S S V I L F L N K K D L L E E K I M Y S H  
SEQ. ID. NO. 37 N S S V I L F L N K K D L L E E K I M Y S H L V D  
SEQ. ID. NO. 33

SEQ. ID. NO. 41 S S V I L F L N K K D L L E E K I M Y S H L V D Y  
SEQ. ID. NO. 47 L V D Y F P E Y D G P Q R D A Q A A R E F I L K M  
SEQ. ID. NO. 37 Y F P E Y D G P Q R D A Q A A R E F I L K M F V D  
SEQ. ID. NO. 33

SEQ. ID. NO. 41 F P E Y D G P Q R D A Q A A R E F I L K M F V D L  
SEQ. ID. NO. 47 F V D L N P D S D K I I Y S H F T C A T D T E N I  
SEQ. ID. NO. 37 L N P D S D K I I Y S H F T C A T D T E N I R F V  
SEQ. ID. NO. 33

SEQ. ID. NO. 41 N P D S D K I I Y S H F T C A T D T E N I R F V F  
SEQ. ID. NO. 47 R F V F A A V K D T I L Q L N L K D C G L F  
SEQ. ID. NO. 37 F A A V K D T I L Q L N L K D C G L F  
SEQ. ID. NO. 33

TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
SN: 09/679,664 ATTY #: (072827-1801)

SEQ. ID. NO. 41 A A V K D T I L Q L N L K D C G L F  
SEQ. ID. NO. 47  
SEQ. ID. NO. 37  
SEQ. ID. NO. 33

Figure 12h

ClustalW Formatted Alignments

SEQ. ID. NO. 44 A T G T T G C T G C T G C T A C T G G C G C  
SEQ. ID. NO. 42 A T G G C T T C C C C G C G G A G C T C C G G G C

SEQ. ID. NO. 44 C A C T C T T C C T C C G C C C C C G G C G C  
SEQ. ID. NO. 42 A G C C C G G G C C G C C G C C G C C G C C G C C

SEQ. ID. NO. 44 G G G C G G G G C G C A G A C C C C A A C G C C  
SEQ. ID. NO. 42 A C C G C C G C C C G C G C G C T G C T A C T G

SEQ. ID. NO. 44 A C C T C A G A A G G T T G C C A G A T C A T A C  
SEQ. ID. NO. 42 C T A C T G C T G C T G C C G C T G C T G C T G C

SEQ. ID. NO. 44 A C C C G C C C T G G G A A G G G G C A T C A G  
SEQ. ID. NO. 42 C T C T G G C G C C C G G G C C T G G G G C T G

SEQ. ID. NO. 44 G T A C C G G G G C T G A C T C G G G A C C A G  
SEQ. ID. NO. 42 G G C G C G G G C G C C C C C G G C C G C C G

SEQ. ID. NO. 44 G T G A A A G G C T A T C A A C T T C C T G C C A G  
SEQ. ID. NO. 42 C C C A G C A G C C C G C C G C T C T C C A T C A

SEQ. ID. NO. 44 T G G A C T A T G A G A T T G A G T A T G T G T G  
SEQ. ID. NO. 42 T G G G C C T C A T G C C G C T C A C C A A G G A

SEQ. ID. NO. 44 C C G G G G G G A G C G C G A G G T G G T G G G G  
SEQ. ID. NO. 42 G G T G G C C A A G G G C A G C A T C G G G C G C

SEQ. ID. NO. 44 C C C A A G G T C C G C A A G T G C C T G G C C A  
SEQ. ID. NO. 42 G G T G T G C T C C C C G C C G T G G A A C T G G

SEQ. ID. NO. 44 A C G G C T C C T G G A C A G A T A T G G A C A C  
SEQ. ID. NO. 42 C C A T C G A G C A G A T C C G C A A C G A G T C

SEQ. ID. NO. 44 A C C C A G C C G C T G T G T C C G A A T C T G C  
SEQ. ID. NO. 42 A C T C C T G C G C C C T T A C T T C C T C G A C

Figure 13a

SEQ. ID. NO. 44 T C C A A G T C T T A T T T G A C C C T G G A A A  
SEQ. ID. NO. 42 C T G C G G G C T C T A T G A C A C G G A G T G C G

SEQ. ID. NO. 44 A T G G G A A G G T T T C C T G A C G G G T G G  
SEQ. ID. NO. 42 A C A A C G C A A A A G G G T T G A A A G C C T T

SEQ. ID. NO. 44 G G A C C T C C C A G C T C T G G A C G G A G C C  
SEQ. ID. NO. 42 C T A C G A T G C A A T A A A A T A C G G G C C G

SEQ. ID. NO. 44 C G G G T G G A T T T C C G G T G T G A C C C C G  
SEQ. ID. NO. 42 A A C C A C T T G A T G G T G T T T G G A G G C G

SEQ. ID. NO. 44 A C T T C C A T C T G G T G G G C A G C T C C C G  
SEQ. ID. NO. 42 T C T G T C C A T C C G T C A C A T C C A T C A T

SEQ. ID. NO. 44 G A G C A T C T G T A G T C A G G G C C A G T G G  
SEQ. ID. NO. 42 T G C A G A G T C C C T C C A A G G C T G G A A T

SEQ. ID. NO. 44 A G C A C C C C C A A G C C C C A C T G C C A G G  
SEQ. ID. NO. 42 C T G G T G C A G C T T T C T T T G C T G C A A

SEQ. ID. NO. 44 T G A A T C G A A C G C C A C A C T C A G A A C G  
SEQ. ID. NO. 42 C C A C G C C T G T T C T A G C C G A T A A G A A

SEQ. ID. NO. 44 G C G C G C A G T G T A C A T C G G G G C A C T G  
SEQ. ID. NO. 42 A A A A T A C C C T T A T T T C T T T C G G A C C

SEQ. ID. NO. 44 T T T C C C A T G A G C G G G G G C T G G C C A G  
SEQ. ID. NO. 42 G T C C C A T C A G A C A A T G C G G T G A A T C

SEQ. ID. NO. 44 G G G G C C A G G C C T G C C A G G C C C G C G G T  
SEQ. ID. NO. 42 C A G C C A T T C T G A A G T T G C T C A A G C A

SEQ. ID. NO. 44 G G A G A T G G C G C T G G A G G A C G T G A A T  
SEQ. ID. NO. 42 C T A C C A G T G G A A G C G C G T G G G C A C G

SEQ. ID. NO. 44 A G C C G G C A G G G A C A T C C T G C C G G A C T  
SEQ. ID. NO. 42 C T G A C G C A A G A C G T T C A G A G G T T C T

SEQ. ID. NO. 44 ATGAGCTCAAGCTCATCCACCAACGA  
SEQ. ID. NO. 42 CTGAGGTGCGGAATGACCTGACTGG

SEQ. ID. NO. 44 CAGCAAGTGTGATCCAGGCCAAGCC  
SEQ. ID. NO. 42 AGTTCTGTATGGCGAGGACATTGAG

SEQ. ID. NO. 44 ACCAAGTACCTATATGAGCTGCTCT  
SEQ. ID. NO. 42 ATTTCAGACACCCGAGAGCTTCTCCA

SEQ. ID. NO. 44 ACAACGACCCATCAAGATCATCCT  
SEQ. ID. NO. 42 ACGATCCCTGTACCAAGTGTCAAAAAA

SEQ. ID. NO. 44 TATGCCCTGGCTGCAGCTCTGTCCTCC  
SEQ. ID. NO. 42 GCTGAAGGGAAATGATGTCGGGATC

SEQ. ID. NO. 44 ACGCTGGTGGCTGAGGCTGCTAGGA  
SEQ. ID. NO. 42 ATCCCTGGCCAGTTGACCAAGAATA

SEQ. ID. NO. 44 TGTGGAACCTCATTTGCTTTCCTA  
SEQ. ID. NO. 42 TGGCAGCAAAAGTGTCTGTTGTGC

SEQ. ID. NO. 44 TGGCTCCAGCTCACCAAGCCCTGTCA  
SEQ. ID. NO. 42 ATACGAGGAGAACATGTATGGTAGT

SEQ. ID. NO. 44 AACCGGGCAGCGTTTCCCCACCTTCT  
SEQ. ID. NO. 42 AAATATCAGTGGATCATTCGGGGCT

SEQ. ID. NO. 44 TCCGAACGCACCCATCAGCCACACT  
SEQ. ID. NO. 42 GGTACGAGCCTTCTGGTGGGAGCA

SEQ. ID. NO. 44 CCACAAACCTACCCGGCTGAAACTC  
SEQ. ID. NO. 42 GGTGCAACACGGAAAGCCAACTCATCC

SEQ. ID. NO. 44 TTTGAAAAGTGGGGCTGGAAGAAAGA  
SEQ. ID. NO. 42 CGCTGCCCTCCGGAAAGAAATCTGCTTG

SEQ. ID. NO. 44 TTGCTACCATCCAGCAGACCACTGA  
SEQ. ID. NO. 42 CTGCCATGGAGGGCTACATTGGCGT

Figure 13c

SEQ. ID. NO. 44 G G T C T T C A C T T C G A C T C T G G A C G A C  
SEQ. ID. NO. 42 G G A T T T C G A G G C C C C T G A G C T C C A A G

SEQ. ID. NO. 44 C T G G A G G A A C G A G T G A A G G A G G C T G  
SEQ. ID. NO. 42 C A G A T C A A G A C C A T C T C A G G A A A G A

SEQ. ID. NO. 44 G A A T T G A G A T T A C T T T C C G C C A G A G  
SEQ. ID. NO. 42 C T C C A C A G C A G T A T G A G A G A G A G T A

SEQ. ID. NO. 44 T T T C T T C T C A G A T C C A G C T G T G C C C  
SEQ. ID. NO. 42 C A A C A A C A A G G C G G T C A G G C G T G G G G

SEQ. ID. NO. 44 G T C A A A A A C C T G A A G G G C C A G G A T G  
SEQ. ID. NO. 42 C C C A G C A A G T T C C A C G G G T A C G C C T

SEQ. ID. NO. 44 C C C G A A T C A T C G T G G G A C T T T T C T A  
SEQ. ID. NO. 42 A C G A T G G C A T C T G G G T C A T C G C C A A

SEQ. ID. NO. 44 T G A G A C T G A A G G C C C G G A A A G T T T T T  
SEQ. ID. NO. 42 G A C A C T G C A G A G G G C C A T G G A G A C A

SEQ. ID. NO. 44 T G T G A G G G T G T A C A A G G A G G C G T C T C T  
SEQ. ID. NO. 42 C T G C A T G C C A G C A G C C C G G C A C C A G C

SEQ. ID. NO. 44 T T G G G A A G A A G T A C G T C T G G T T C C T  
SEQ. ID. NO. 42 G G A T C C A G G A C T T C A A C T A C A C G G A

SEQ. ID. NO. 44 C A T T G G G T G G T A T G C T G A C A A T T G G  
SEQ. ID. NO. 42 C C A C A C G C T G G G C A G G A T C A T C C T C

SEQ. ID. NO. 44 T T C A A G A T C T A C G A C C C T T C T A T C A  
SEQ. ID. NO. 42 A A T G C C A T G A A C G A G A C C A A C T T C T

SEQ. ID. NO. 44 A C T G C A C A G T G G A T G A G A T G A C T G A  
SEQ. ID. NO. 42 T C G G G G T C A C G G G T C A A G T T G T A T T

SEQ. ID. NO. 44 G G C G G T G G A G G G C C A C A T C A C A A C T  
SEQ. ID. NO. 42 C C G G A A T G G G G A G A G A A T G G G G A C C

Figure 13d

SEQ. ID. NO. 44 G A G A T T G T C A T G C T G A A T C C T G C C A  
SEQ. ID. NO. 42 A T T A A A T T T A C T C A A T T T C A A G A C A

SEQ. ID. NO. 44 A T A C C C G C A G C A T T T C C A A C A T G A C  
SEQ. ID. NO. 42 G C A G G G A G G T G A A G G T G G G A G A G T A

SEQ. ID. NO. 44 A T C C C A G G A A T T T G T G G A G A A A C T A  
SEQ. ID. NO. 42 C A A C G C T G T G G C C G A C A C A C T G G A G

SEQ. ID. NO. 44 A C C A A G C G A C T G A A A A A G A C A C C C T G  
SEQ. ID. NO. 42 A T C A T C A A T G A C A C C A T C A G G T T C C

SEQ. ID. NO. 44 A G G A G A C A G G A G G C T T C C A G G A G G C  
SEQ. ID. NO. 42 A A G G A T C C G A A C C A C C A A A A G A C A A

SEQ. ID. NO. 44 A C C G C T G G C C T A T G A T G C C A T C T G G  
SEQ. ID. NO. 42 G A C C A T C A T C C T G G A G C A G C T G C G G

SEQ. ID. NO. 44 G C C T T G G C A C T G G C C C T G A A A C A A G A  
SEQ. ID. NO. 42 A A G A T C T C C C T A C C T C T C T A C A G C A

SEQ. ID. NO. 44 C A T C T G G A G G A G G G C G G C G T T C T G G  
SEQ. ID. NO. 42 T C C T C T G C C C T C A C C A T C C T C G G

SEQ. ID. NO. 44 T G T G C G C C T G G A G G A C T T C A A C T A C  
SEQ. ID. NO. 42 G A T G A T C A T G G C C A G T G C T T T C T C

SEQ. ID. NO. 44 A A C A A C C A G A C C A T T A C C G A C C A A A  
SEQ. ID. NO. 42 T T C T T C A A C A T C A A G A A C C G G A A T C

SEQ. ID. NO. 44 T C T A C C G G G C A A T G A A C T C T T C G T C  
SEQ. ID. NO. 42 A G A A G C T C A T A A A G A T G T C G A G T C C

SEQ. ID. NO. 44 C T T T G A G G G T G T C T C T G G C C A T G T G  
SEQ. ID. NO. 42 A T A C A T G A A C A A C C T T A T C A T C C T T

SEQ. ID. NO. 44 G T G T T T G A T G C C A G C G G C T C T C G G A  
SEQ. ID. NO. 42 G G A G G G A T G C T C C T A T G C T T C C A

Figure 13e

SEQ. ID. NO. 44 T G G C A T G G A C G G C T T A T C G A G C A G C T  
SEQ. ID. NO. 42 T A T T T C T C T T G G C C T T G A T G G A T C

SEQ. ID. NO. 44 T C A G G G T G G C A G C T A C A A G A A G A T T  
SEQ. ID. NO. 42 C T T T G T C T C T G A A A A G A C C T T G A A

SEQ. ID. NO. 44 G G C T A C T A T G A C A G C A C C A A G G A T G  
SEQ. ID. NO. 42 A C A C T T T G C A C C G T C A G G A C C T G G A

SEQ. ID. NO. 44 A T C T T T C C T G G T C C A A A A C A G A T A A  
SEQ. ID. NO. 42 T T C T C A C C G T G G G C T A C A C G A C C G C

SEQ. ID. NO. 44 A T G G A T T G G A G G G T C C C C C C C A G C T  
SEQ. ID. NO. 42 T T T T G G G G C A T G T T G C A A A G A C C

SEQ. ID. NO. 44 G A C C A G A C C C T G G T C A T C A A G A C A T  
SEQ. ID. NO. 42 T G G A G A G T C C A C G C C A T C T T C A A A A

SEQ. ID. NO. 44 T C C G C T T C C T G T C A C A G A A A C T C T T  
SEQ. ID. NO. 42 A T G T G A A A A T G A A G A A G A A G A T C A T

SEQ. ID. NO. 44 T A T C T C C G T C T C A G T T C T C T C C A G C  
SEQ. ID. NO. 42 C A A G G A C C A G A A A C T G C T T G T G A T C

SEQ. ID. NO. 44 C T G G G C A T T G T C C T A G C T G T T G T C T  
SEQ. ID. NO. 42 G T G G G G G G C A T G C T G C T G A T C G A C C

SEQ. ID. NO. 44 G T C T G T C C T T T A A C A T C T A C A A C T C  
SEQ. ID. NO. 42 T G T G T A T C C T G A T C T G C T G G C A G G C

SEQ. ID. NO. 44 A C A T G T C C G T T A T A T C C A G A A C T C A  
SEQ. ID. NO. 42 T G T G G A C C C C C T G C G A A G G A C A G T G

SEQ. ID. NO. 44 C A G C C C A A C C T G A A C A A C C T G A C T G  
SEQ. ID. NO. 42 G A G A A G T A C A G C A T G G A G G C C G G A C C

SEQ. ID. NO. 44 C T G T G G G C T G C T C A C T G G C T T T A G C  
SEQ. ID. NO. 42 C A G C A G G A C G G G A T A T C T C C A T C C G

Figure 13f

SEQ. ID. NO. 44 TGCTGTCTTCCCCCTGGGGCTCGAT  
SEQ. ID. NO. 42 CCCTCTCCCTGGAGCACTGTGAGAAC

SEQ. ID. NO. 44 GGT TACCCACAT TGGGAGGAAC CAGT  
SEQ. ID. NO. 42 ACCCATA T GACCATCTGGCTTGGCA

SEQ. ID. NO. 44 TTCCCTTTCGTCTGCCAGGCCGCC  
SEQ. ID. NO. 42 TCGTCTATGCCCTACAAAGGGACTTCT

SEQ. ID. NO. 44 CTGGCTCCCTGGGCCCTGGGCTTTAGT  
SEQ. ID. NO. 42 CATGTTGTTGGTTGTCTTAGCT

SEQ. ID. NO. 44 CTGGGCTACGGTTCCATGTTCACCA  
SEQ. ID. NO. 42 TGGGAGACCCGCAACGTCAGCACTCC

SEQ. ID. NO. 44 AGATT TGGTGGGTCCACACGGTCTT  
SEQ. ID. NO. 42 CCGCACTCAACGACAGCAAGTACAT

SEQ. ID. NO. 44 CACAAAGAAGGAAGAAAAAGAAGGAG  
SEQ. ID. NO. 42 CGGGATGAGTGTCTACAAACGTGGGG

SEQ. ID. NO. 44 TGGAGGAAGACTCTGGAACCCCTGG  
SEQ. ID. NO. 42 ATCATGTCATCATCGGGGCCGCTG

SEQ. ID. NO. 44 AGCTGTATGCCACAGTGGGCCCTGCT  
SEQ. ID. NO. 42 TCTCCCTTCCCTGACCCGGGACCAAGCC

SEQ. ID. NO. 44 GGTGGGCATGGATGTCCTCACCTC  
SEQ. ID. NO. 42 CAATGTCAGTTCTGCATCGTGGCT

SEQ. ID. NO. 44 GGCATCTGGCAGATCGTGGACCC  
SEQ. ID. NO. 42 CTGGTCATCATCTTCTGCAGCACCA

SEQ. ID. NO. 44 TGCACCCGGACCATTGAGACATTG  
SEQ. ID. NO. 42 TCACCCCTCTGCCCTGGTATTGCGTGC

SEQ. ID. NO. 44 CAAGGAGGAACCTAAGGAAGATATT  
SEQ. ID. NO. 42 GAAGCTCATCACCCCTGAGAACAAAC

SEQ. ID. NO. 44 G A C G T C T C T A T T C T G C C C C A G C T G G  
SEQ. ID. NO. 42 C C A G A T G C A G C A A C G C A G A A C A G G C

SEQ. ID. NO. 44 A G C A T T G C A G C T C C A G G A A G A T G A A  
SEQ. ID. NO. 42 G A T T C C A G T T C A C T C A G A A T C A G A A

SEQ. ID. NO. 44 T A C A T G G C T T G G C A T T T C T A T G G T  
SEQ. ID. NO. 42 G A A A G A A G A T T C T A A A A C G T C C A C C

SEQ. ID. NO. 44 T A C A A G G G G C T G C T G C T G C T G C T G G  
SEQ. ID. NO. 42 T C G G T C A C C A G T G T G A A C C A A G C C A

SEQ. ID. NO. 44 G A A T C T T C C T T G C T T A T G A G A C C A A  
SEQ. ID. NO. 42 G C A C A T C C C G C C T G G A G G G C C T A C A

SEQ. ID. NO. 44 G A G T G T G T C C A C T G A G A A G A T C A A T  
SEQ. ID. NO. 42 G T C A G A A A A C C A T C G C C T G C G A A T G

SEQ. ID. NO. 44 G A T C A C C G G G C T G T G G G C A T G G C T A  
SEQ. ID. NO. 42 A A G A T C A C A G A G C T G G A T A A A G A C T

SEQ. ID. NO. 44 T C T A C A A T G T G G C A G T C C T G T G C C T  
SEQ. ID. NO. 42 T G G A A G A G G T C A C C A T G C A G C T G C A

SEQ. ID. NO. 44 C A T C A C T G C T C C T G T C A C C A T G A T T  
SEQ. ID. NO. 42 G G A C A C A C C A G A A A A G A C C A C C T A C

SEQ. ID. NO. 44 C T G T C C A G C C A G C A G G A T G C A G C C T  
SEQ. ID. NO. 42 A T T A A A C A G A A C C A C T A C C A A G A G C

SEQ. ID. NO. 44 T T G C C T T T G C C T C T C T G C C A T A G T  
SEQ. ID. NO. 42 T C A A T G A C A T C C T C A A C C T G G G A A A

SEQ. ID. NO. 44 T T T C T C C T C C T A T A T C A C T C T T G T T  
SEQ. ID. NO. 42 C T T C A C T G A G A G C A C A G A T G G A G G A

SEQ. ID. NO. 44 G T G C T C T T G T G C C C A A G A T G C G C A  
SEQ. ID. NO. 42 A A G G C C A T T T A A A A A T C A C C T C G

Figure 13h

SEQ. ID. NO. 44 GGCTGATCACCCGAGGGGAATGGCA  
SEQ. ID. NO. 42 ATCAAAATCCCCAGCTACAGTGGAA

SEQ. ID. NO. 44 GT CGGAGGCAGGACACCATGAAG  
SEQ. ID. NO. 42 CACAAACAGAGCCCTCTCGAACATGC

SEQ. ID. NO. 44 ACAGGGTCATCGACCAACAACAACG  
SEQ. ID. NO. 42 AAAGATCCATATAGAAGATAAAACT

SEQ. ID. NO. 44 AGGAGGGAGAAGTCCGGCTGTTGGA  
SEQ. ID. NO. 42 CTCCAGAACACATCCAGCGTCGGCT

SEQ. ID. NO. 44 G AAGGAGAACCGTGAAC TGGAAG  
SEQ. ID. NO. 42 GTCCCTCCAGCTCCCCATCCCTCCAC

SEQ. ID. NO. 44 ATCATTGCTGAGAAAGAGGGAGCGTG  
SEQ. ID. NO. 42 CACGCCCTACCTCCATCCATCGGAG

SEQ. ID. NO. 44 TCTCTGAAC TGCGCCATCAACTCCA  
SEQ. ID. NO. 42 CGTGGACGCCAGCTGTGTCAGCCC

SEQ. ID. NO. 44 GTCTCGGCAGCAGCTCCGCTCCCCG  
SEQ. ID. NO. 42 CTGCGTCAGCCCCACCGCCAGCCCC

SEQ. ID. NO. 44 CGCCACCCACCGACACCCCCCAGAAC  
SEQ. ID. NO. 42 CGCCACAGACATGTGCCACCCCTCC

SEQ. ID. NO. 44 CCTCTGGGGGCTGCCCCAGGGGACC  
SEQ. ID. NO. 42 TCCGAGTCATGGTCTCGGGCCTGGC

SEQ. ID. NO. 44 CCTCTGAGCCCCCGACCGGCTTAGC  
SEQ. ID. NO. 42 GGCGGCCATGACTCTGGAGTCCATC

SEQ. ID. NO. 44 TGTGATGGGAGTCGAGTGCATTG  
SEQ. ID. NO. 42 ATGGCGTGCTGCCCTGAGCGAGGAGG

SEQ. ID. NO. 44 TTATATAAGGGGGCCATGACTCT  
SEQ. ID. NO. 42 CCAAGGAAGCCCCGGGATCAACGA

SEQ. ID. NO. 44 GGAGTCCATCATGGCGTGCTGCCCTG  
SEQ. ID. NO. 42 CGAGATCGAGCGGGCAGCTCCCGCAGG

SEQ. ID. NO. 44 AGCGAGGGAGGCCAAGGAAGGCCCGGC  
SEQ. ID. NO. 42 GACAAGCGGGACGCCCGCCCGGGAGC

SEQ. ID. NO. 44 GGATCAACGACGGAGATCGAGCGGGCA  
SEQ. ID. NO. 42 TCAAGCTGCTGCTGCTCGGGACAGG

SEQ. ID. NO. 44 GCTCCGCAGGGACAAAGCGGGACGCC  
SEQ. ID. NO. 42 AGAGAGTGGCAAGAGTACGTTTATC

SEQ. ID. NO. 44 CGCCGGGAGCTCAAGCTGCTGCTG  
SEQ. ID. NO. 42 AAGCAGATGAGAAATCATCCATGGGT

SEQ. ID. NO. 44 TCGGGACAGGAGAGAGTGGCAAGAG  
SEQ. ID. NO. 42 CAGGATACTCTGATGAAGATAAAAG

SEQ. ID. NO. 44 TACGTTTATCAAGCAGATGAGAATC  
SEQ. ID. NO. 42 GGGCTTCACCAAGCTGGTGTATCAG

SEQ. ID. NO. 44 ATCCATGGGTCAGGATACTCTGATG  
SEQ. ID. NO. 42 AACATCTTCACGGCCATGCAAGGCCA

SEQ. ID. NO. 44 AAGATAAAAGGGGCTTCACCAAGCT  
SEQ. ID. NO. 42 TGATCAGAGCCATGGACACACTCAA

SEQ. ID. NO. 44 GGTGTATCAGAACATCTCACGGCC  
SEQ. ID. NO. 42 GATCCCATAACAAGTATGAGCACAAAT

SEQ. ID. NO. 44 ATGCAGGCCATGATCAGAGGCCATGG  
SEQ. ID. NO. 42 AAGGCTCATGCACAAATTAGTTCGAG

SEQ. ID. NO. 44 ACACACTCAAGATCCCATAACAAGTA  
SEQ. ID. NO. 42 AAGTTGATGTGGAGAAGGTGTCATGC

SEQ. ID. NO. 44 TGAGCACAAATAAGGCTCATGCACAA  
SEQ. ID. NO. 42 TTTTGAGAATCCATATGTAGATGCA

Figure 13j

SEQ. ID. NO. 44 T T A G T T C G A G A A G T T G A T G T G G A G A  
SEQ. ID. NO. 42 A T A A A G A G T T T A T G G A A T G A T C C T G

SEQ. ID. NO. 44 A G G T G T C T G C T T T G A G A A T C C A T A  
SEQ. ID. NO. 42 G A A T C C A G G A A T G C T A T G A T A G A C G

SEQ. ID. NO. 44 T G T A G A T G C A A T A A A G A G T T T A T G G  
SEQ. ID. NO. 42 A C G A G A A T A T C A A T T A T C T G A C T C T

SEQ. ID. NO. 44 A A T G A T C C T G G A A T C C A G G A A T G C T  
SEQ. ID. NO. 42 A C C A A A T A C T A T C T T A A T G A C T T G G

SEQ. ID. NO. 44 A T G A T A G A C G A C G A G A A T A T C A A T T  
SEQ. ID. NO. 42 A C C G C G T A G C T G A C C C T G C C T A C C T

SEQ. ID. NO. 44 A T C T G A C T C T A C C A A A T A C T A T C T T  
SEQ. ID. NO. 42 G C C T A C G C A A C A A G A T G T G C T T A G A

SEQ. ID. NO. 44 A A T G A C T T G G A C C G C G T A G C T G A C C  
SEQ. ID. NO. 42 G T T C G A G T C C C C A C C A C A G G G A T C A

SEQ. ID. NO. 44 C T G C C T A C C T G C C T A C G C A A C A A G A  
SEQ. ID. NO. 42 T C G A A T A C C C C T T G A C T T A C A A A G

SEQ. ID. NO. 44 T G T G C T T A G A G T T C G A G T C C C C A C C  
SEQ. ID. NO. 42 T G T C A T T T C A G A A T G G T C G A T G T A

SEQ. ID. NO. 44 A C A G G G A T C A T C G A A T A C C C C T T G  
SEQ. ID. NO. 42 G G G G G C C A A A G G T C A G A G A G A A G A A

SEQ. ID. NO. 44 A C T T A C A A A G T G T C A T T T C A G A A T  
SEQ. ID. NO. 42 A A T G G A T A C A C T G C T T T G A A A A T G T

SEQ. ID. NO. 44 G G T C G A T G T A G G G G G C C A A A G G T C A  
SEQ. ID. NO. 42 C A C C T C T A T C A T G T T T C T A G T A G C G

SEQ. ID. NO. 44 G A G A G A A G A A A A T G G A T A C A C T G C T  
SEQ. ID. NO. 42 C T T A G T G A A T A T G A T C A A G T T C T G G

SEQ. ID. NO. 44 TTGAAAATGTCACCTCTATCATGTT  
SEQ. ID. NO. 42 TGGAGTCAGACAAATGAGAACCGAAT

SEQ. ID. NO. 44 TCTAGTAGCGCTTAGTGAATATGAT  
SEQ. ID. NO. 42 GGAGGAAAGCAAGGCTCTCTTAA

SEQ. ID. NO. 44 CAAGTTCTCGTGGAGTCAGACAAATG  
SEQ. ID. NO. 42 ACAATTATCACATACCCCTGGTTCC

SEQ. ID. NO. 44 AGAACCGAATGGAGGAAAGCAAAGGC  
SEQ. ID. NO. 42 AGAACTCCCTCGTTATTCTGTCTT

SEQ. ID. NO. 44 TCTCTTTAGAACAAATTATCACATAC  
SEQ. ID. NO. 42 AAAACAAGAAAGATCTTCTAGAGGAG

SEQ. ID. NO. 44 CCCCTGGTTCCAGAACCTCCCTGGTTA  
SEQ. ID. NO. 42 AAAATCATGTATTCCCATCTAGTCG

SEQ. ID. NO. 44 TTCTGTTCTTAAACAAAGAAAGATCT  
SEQ. ID. NO. 42 ACTACTTCCCAGAACATATGATGGACC

SEQ. ID. NO. 44 TCTAGAGGAGAAAATCATGTATTCC  
SEQ. ID. NO. 42 CCAGAGAGATGCCAGGGCAGCCCCGA

SEQ. ID. NO. 44 CATCTAGTCGACTACTTCCCAGAAC  
SEQ. ID. NO. 42 GAATTCAATTCTGAAGATGTTCTGG

SEQ. ID. NO. 44 ATGATGGACCCAGAGAGATGCCCA  
SEQ. ID. NO. 42 ACCTGAACCCAGACAGTGAACAAAT

SEQ. ID. NO. 44 GGCAGCCCCGAGAATTCAATTCTGAAG  
SEQ. ID. NO. 42 TAACTACTTCCCACCTCACGTGCC

SEQ. ID. NO. 44 ATGTTCTGGACCTGAAACCCAGACA  
SEQ. ID. NO. 42 ACAGACACCGAGAACATATCCGCTTTG

SEQ. ID. NO. 44 GTGACAAAAATTATCTACTTCCCACCT  
SEQ. ID. NO. 42 TCTTTGCTGCCGTCAAGGACACCAT

Figure 131

SEQ. ID. NO. 44 C A C G T G C G C C A C A G A C A C C G A G A A T  
SEQ. ID. NO. 42 C C T C C A G T T G A A C C T G A A G G G C T G C

SEQ. ID. NO. 44 A T C C G C T T T G T C T T T G C T G C C G T C A  
SEQ. ID. NO. 42 G G T C T G T A C

SEQ. ID. NO. 44 A G G A C A C C A T C C T C C A G T T G A A C C T  
SEQ. ID. NO. 42

SEQ. ID. NO. 44 G A A G G G C T G C G G T C T G T A C  
SEQ. ID. NO. 42

Figure 13m

ClustalW Formatted Alignments

SEQ. ID. NO. 45 M L L L L L A P L F L R P P G A G G A Q T P N A  
SEQ. ID. NO. 43 M A S P R S S G Q P G P P P P P P P P P P P A R L L

SEQ. ID. NO. 45 T S E G C Q I I H P P W E G G I R Y R G L T R D Q  
SEQ. ID. NO. 43 L L L L P L L L P L A P G A W G W A R G A P R P P

SEQ. ID. NO. 45 V K A I N F L P V D Y E I E Y V C R G E R E V V G  
SEQ. ID. NO. 43 P S S P P L S I M G L M P L T K E V A K G S I G R

SEQ. ID. NO. 45 P K V R K C L A N G S W T D M D T P S R C V R I C  
SEQ. ID. NO. 43 G V L P A V E L A I E Q I R N E S L L R P Y F L D

SEQ. ID. NO. 45 S K S Y L T L E N G K V F L T G G D L P A L D G A  
SEQ. ID. NO. 43 L R L Y D T E C D N A K G L K A F Y D A I K Y G P

SEQ. ID. NO. 45 R V D F R C D P D F H L V G S S R S I C S Q G Q W  
SEQ. ID. NO. 43 N H L M Y F G G V C P S V T S I I A E S L Q G W N

SEQ. ID. NO. 45 S T P K P H C Q V N R T P H S E R R A V Y I G A L  
SEQ. ID. NO. 43 L V Q L S F A A T T P V L A D K K K Y P Y F F R T

SEQ. ID. NO. 45 F P M S G G W P G G Q A C Q P A V E M A L E D V N  
SEQ. ID. NO. 43 V P S D N A V N P A I L K L L K H Y Q W K R V G T

SEQ. ID. NO. 45 S R R D I L P D Y E L K L I H H D S K C D P G Q A  
SEQ. ID. NO. 43 L T Q D V Q R F S E V R N D L T G V L Y G E D I E

SEQ. ID. NO. 45 T K Y L Y E L L Y N D P I K I I L M P G C S S V S  
SEQ. ID. NO. 43 I S D T E S F S N D P C T S V K K L K G N D V R I

SEQ. ID. NO. 45 T L V A E A A R M W N L I V L S Y G S S S P A L S  
SEQ. ID. NO. 43 I L G Q F D Q N M A A K V F C C A Y E E N M Y G S

SEQ. ID. NO. 45 N R Q R F P T F F R T H P S A T L H N P T R V K L  
SEQ. ID. NO. 43 K Y Q W I I P G W Y E P S W W E Q V H T E A N S S

Figure 14a

SEQ. ID. NO. 45 F E K W G W K K I A T I Q Q T T E V F T S T L D D  
SEQ. ID. NO. 43 R C L R K N L L A A M E G Y I G V D F E P L S S K

SEQ. ID. NO. 45 L E E R V K E A G I E I T F R Q S F F S D P A V P  
SEQ. ID. NO. 43 Q I K T I S G K T P Q Q Y E R E Y N N K R S G V G

SEQ. ID. NO. 45 V K N L K R Q D A R I I V G L F Y E T E A R K V F  
SEQ. ID. NO. 43 P S K F H G Y A Y D G I W V I A K T L Q R A M E T

SEQ. ID. NO. 45 C E V Y K E R L F G K K Y V V W F L I G W Y A D N W  
SEQ. ID. NO. 43 L H A S S R H Q R I Q D F N Y T D H T L G R I I L

SEQ. ID. NO. 45 F K I Y D P S I N C T V D E M T E A V E G H I T T  
SEQ. ID. NO. 43 N A M N E T N P F G V T G Q V V F R N G E R M G T

SEQ. ID. NO. 45 E I V M L N P A N T R S I S N M T S Q E F V E K L  
SEQ. ID. NO. 43 I K F T Q F Q D S R E V K V G E Y N A V A D T L E

SEQ. ID. NO. 45 T K R L K R H P E E T G G - F Q E A P L A Y D A I  
SEQ. ID. NO. 43 I I N D T I R F Q G S E P P K D K T I I L E Q L R

SEQ. ID. NO. 45 W A L A L A L N K T S G G G G R S G V R L E D F N  
SEQ. ID. NO. 43 K I S L P L Y S I L S A L T I L G M I M A S A F L

SEQ. ID. NO. 45 Y N N Q T I T D Q I Y R A M N S S S F E G V S G H  
SEQ. ID. NO. 43 F F N I K N R N Q K L I K M S S P Y M N N L I I L

SEQ. ID. NO. 45 V V F D A S G S R M A W T L I E Q L Q G G S Y K K  
SEQ. ID. NO. 43 G G M L S Y A S I F L F G L D G S F V S E K T F E

SEQ. ID. NO. 45 I G Y Y D S T K D D L S W S K T D K W I G G S P P  
SEQ. ID. NO. 43 T L C T V R T W I L T V G Y T T A F G A M F A K T

SEQ. ID. NO. 45 A D Q T L V I K T F R F L S Q K L F I S V S V L S  
SEQ. ID. NO. 43 W R V H A I F K N V K M K K K I I K D Q K L L V I

SEQ. ID. NO. 45 S L G I V L A V V C L S F N I Y N S H V R Y I Q N  
SEQ. ID. NO. 43 V G G M L L I D L C I L I C W Q A V D P L R R T V

SEQ. ID. NO. 45 S Q P N L N N L T A V G C S L A L A A V F P L G L  
SEQ. ID. NO. 43 E K Y S M E P D P A G R D I S I R P L L E H C E N

SEQ. ID. NO. 45 D G Y H I G R N Q F P F V C Q A R L W L L G L G F  
SEQ. ID. NO. 43 T H M T I W L G I V Y A Y K G L L M L F G C F L A

SEQ. ID. NO. 45 S L G Y G S M F T K I W W V H T V F T K K E E K K  
SEQ. ID. NO. 43 W E T R N V S I P A L N D S K Y I G M S V Y N V G

SEQ. ID. NO. 45 E W R K T L E P W K L Y A T V G L L V G M D V L T  
SEQ. ID. NO. 43 I M C I I G A A V S F L T R D Q P N V Q F C I V A

SEQ. ID. NO. 45 L A I W Q I V D P L H R T I E T F A K E E P K E D  
SEQ. ID. NO. 43 L V I I F C S T I T L C L V F V P K L I T L R T N

SEQ. ID. NO. 45 I D V S I L P Q L E H C S S R K M N T W L G I F Y  
SEQ. ID. NO. 43 P D A A T Q N R R F Q F T Q N Q K K E D S K T S T

SEQ. ID. NO. 45 G Y K G L L L L G I F L A Y E T K S V S T E K I  
SEQ. ID. NO. 43 S V T S V N Q A S T S R L E G L Q S E N H R L R M

SEQ. ID. NO. 45 N D H R A V G M A I Y N V A V L C L I T A P V T M  
SEQ. ID. NO. 43 K I T E L D K D L E E V T M Q L Q D T P E K T T Y

SEQ. ID. NO. 45 I L S S Q Q D A A F A F A S L A I V F S S Y I T L  
SEQ. ID. NO. 43 I K Q N H Y Q E L N D I L N L G N F T E S T D G G

SEQ. ID. NO. 45 V V L F V P K M R R L I T R G E W Q S E A Q D T M  
SEQ. ID. NO. 43 K A I L K N H L D Q N P Q L Q W N T T E P S R T C

SEQ. ID. NO. 45 K T G S S T N N N E E E K S R L L E K E N R E L E  
SEQ. ID. NO. 43 K D P I E D I N S P E H I Q R R L S L Q L P I L H

SEQ. ID. NO. 45 K I I A E K E E R V S E L R H Q L Q S R Q Q L R S  
SEQ. ID. NO. 43 H A Y L P S I G G V D A S C V S P C V S P T A S P

SEQ. ID. NO. 45 R R H P P T P P E P S G G L P R G P P E P P D R L  
SEQ. ID. NO. 43 R H R H V P P S F R V M V S G L A A A M T L E S I

Figure 14c

SEQ. ID. NO. 45 S C D G S R V H L L Y K A A A M T L E S I M A C C  
SEQ. ID. NO. 43 M A C C L S E E A K E A R R I N D E I E R Q L R R

SEQ. ID. NO. 45 L S E E A K E A R R I N D E I E R Q L R R D K R D  
SEQ. ID. NO. 43 D K R D A R R E L K L L L L G T G E S G K S T F I

SEQ. ID. NO. 45 A R R E L K L L L L G T G E S G K S T F I K Q M R  
SEQ. ID. NO. 43 K Q M R I I H G S G Y S D E D K R G F T K L V Y Q

SEQ. ID. NO. 45 I I H G S G Y S D E D K R G F T K L V Y Q N I F T  
SEQ. ID. NO. 43 N I F T A M Q A M I R A M D T L K I P Y K Y E H N

SEQ. ID. NO. 45 A M Q A M I R A M D T L K I P Y K Y E H N K A H A  
SEQ. ID. NO. 43 K A H A Q L V R E V D V E K V S A F E N P Y V D A

SEQ. ID. NO. 45 Q L V R E V D V E K V S A F E N P Y V D A I K S E  
SEQ. ID. NO. 43 I K S L W N D P G I Q E C Y D R R R E Y Q L S D S

SEQ. ID. NO. 45 W N D P G I Q E C Y D R R R E Y Q L S D S T K Y Y  
SEQ. ID. NO. 43 T K Y Y L N D L D R V A D P A Y L P T Q Q D V L R

SEQ. ID. NO. 45 L N D L D R V A D P A Y L P T Q Q D V L R V R V P  
SEQ. ID. NO. 43 V R V P T T G I I E Y P F D L Q S V I F R M V D V

SEQ. ID. NO. 45 T T G I I E Y P F D L Q S V I F R M V D V G G Q R  
SEQ. ID. NO. 43 G G Q R S E R R K W I H C F E N V T S I M F L V A

SEQ. ID. NO. 45 S E R R K W I H C F E N V T S I M F L V A L S E Y  
SEQ. ID. NO. 43 L S E Y D Q V L V E S D N E N R M E E S K A L F R

SEQ. ID. NO. 45 D Q V L V E S D N E N R M E E S K A L F R T I I T  
SEQ. ID. NO. 43 T I I T Y P W F Q N S S V I L F L N K K D L L E E

SEQ. ID. NO. 45 Y P W F Q N S S V I L F L N K K D L L E E K I M Y  
SEQ. ID. NO. 43 K I M Y S H L V D Y F P E Y D G P Q R D A Q A A R

SEQ. ID. NO. 45 S H L V D Y F P E Y D G P Q R D A Q A A R E F I L  
SEQ. ID. NO. 43 E F I L K M F V D L N P D S D K I N Y S H F T C A

Figure 14d

TITLE: G-Protein Fusion Receptors And  
Chimeric Gaba<sub>A</sub> Receptors  
INVENTORS: Thomas STORMANN, et al.  
SN: 09/679,664 ATTY #: (072827-1801)

SEQ. ID. NO. 45 K M F V D L N P D S D K I I Y S H F T C A T D T E  
SEQ. ID. NO. 43 T D T E N I R F V F A A V K D T I L Q L N L K G C

SEQ. ID. NO. 45 N I R F V F A A V K D T I L Q L N L K G C G L Y  
SEQ. ID. NO. 43 G L Y

Figure 14e

mGluR2//CaR<sup>\*</sup>Gqi5

CaR/ mGluR2/\*Gqi5

mGluR8//CaR<sup>\*</sup>Gqi5

100  $\mu$ M L-glutamate

100  $\mu$ M Gd<sup>3+</sup>

30  $\mu$ M L-glutamate

200 nA

1 min

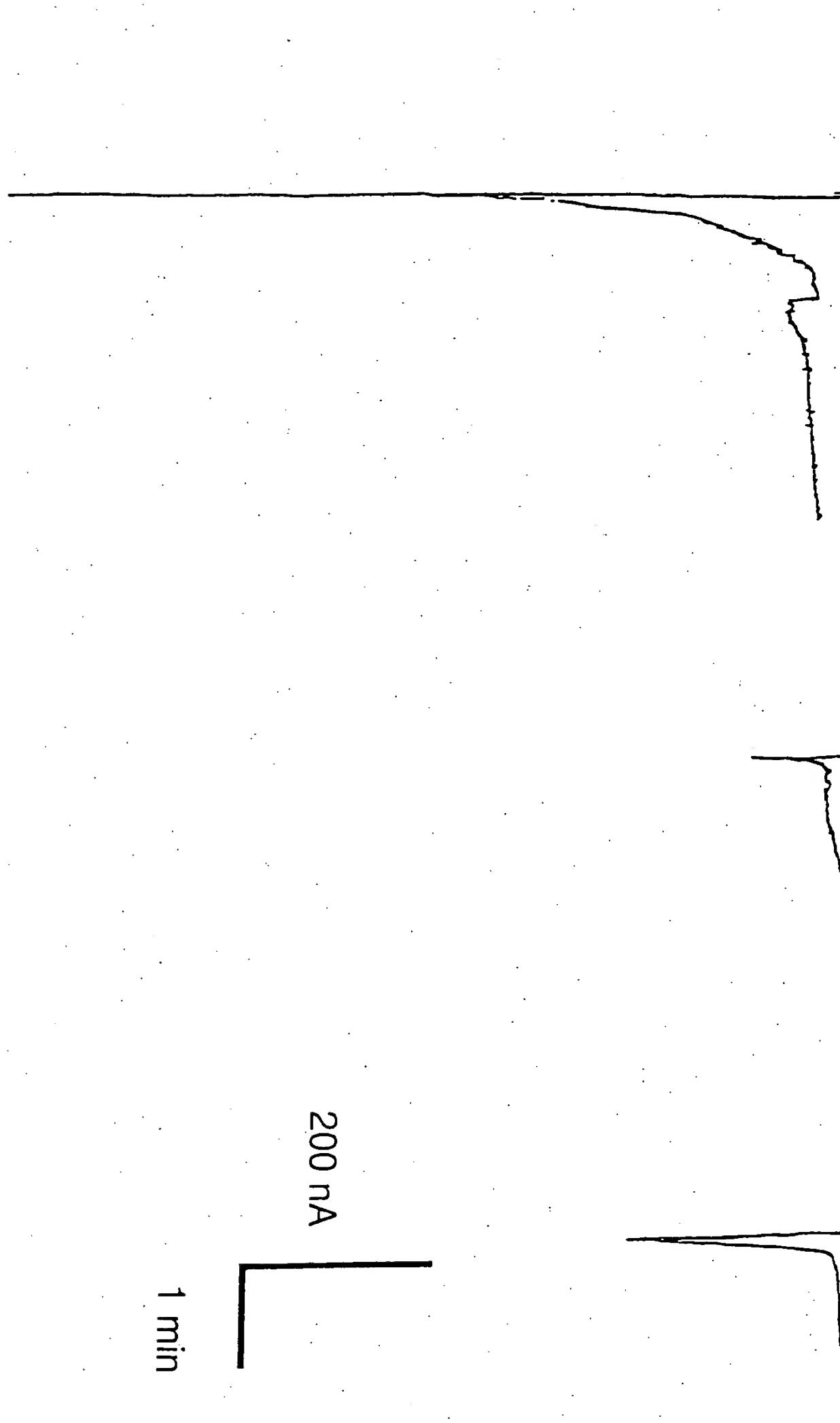


Figure 15

SEQ. ID. NO. 48 M V C E G K R S A S C P C F F L L T A K F Y W I L T M M Q R  
SEQ. ID. NO. 49 M V C E G K R S A S C P C F F L L T A K F Y W I L T M M Q R  
SEQ. ID. NO. 50 M V C E G K R S A S C P C F F L L T A K F Y W I L T M M Q R

SEQ. ID. NO. 48 T H S Q E Y A H S I R I D G D I T L G G L F P V H G R G S E  
SEQ. ID. NO. 49 T H S Q E Y A H S I R I D G D I T L G G L F P V H G R G S E  
SEQ. ID. NO. 50 T H S Q E Y A H S I R V D G D I I L G G L F P V H A K G E R

SEQ. ID. NO. 48 G K P C G E L K K E K G I H R L E A M L F A L D R I N N D P  
SEQ. ID. NO. 49 G K P C G E L K K E K G I H R L E A M L F A L D R I N N D P  
SEQ. ID. NO. 50 G V P C G E L K K E K G I H R L E A M L Y A I D Q I N K D P

SEQ. ID. NO. 48 D L L P N I T L G A R I L D T C S R D T H A L E Q S L T F V  
SEQ. ID. NO. 49 D L L P N I T L G A R I L D T C S R D T H A L E Q S L T F V  
SEQ. ID. NO. 50 D L L S N I T L G V R I L D T C S R D T Y A L E Q S L T F V

SEQ. ID. NO. 48 Q A L I E K D G T E V R C G S G G P P I I T K P E R V V G V  
SEQ. ID. NO. 49 Q A L I E K D G T E V R C G S G G P P I I T K P E R V V G V  
SEQ. ID. NO. 50 Q A L I E K D A S D V K C A N G D P P I F T K P D K I S G V

SEQ. ID. NO. 48 I G A S G S S V S I M V A N I L R L F K I P Q I S Y A S T A  
SEQ. ID. NO. 49 I G A S G S S V S I M V A N I L R L F K I P Q I S Y A S T A  
SEQ. ID. NO. 50 I G A A A S S V S I M V A N I L R L F K I P Q I S Y A S T A

SEQ. ID. NO. 48 P D L S D N S R Y D F F S R V V P S D T Y Q A Q A M V D I V  
SEQ. ID. NO. 49 P D L S D N S R Y D F F S R V V P S D T Y Q A Q A M V D I V  
SEQ. ID. NO. 50 P E L S D N T R Y D F F S R V V P P D S Y Q A Q A M V D I V

SEQ. ID. NO. 48 R A L K W N Y V S T V A S E G S Y G E S G V E A F I Q K S R  
SEQ. ID. NO. 49 R A L K W N Y V S T V A S E G S Y G E S G V E A F I Q K S R  
SEQ. ID. NO. 50 T A L G W N Y V S T L A S E G N Y G E S G V E A F T Q I S R

SEQ. ID. NO. 48 E D G G V C I A Q S V K I P R E P K A G E F D K I I R R L L  
SEQ. ID. NO. 49 E D G G V C I A Q S V K I P R E P K A G E F D K I I R R L L  
SEQ. ID. NO. 50 E I G G V C I A Q S Q K I P R E P R P G E F E K I I K R L L

Figure 16a

SEQ. ID. NO. 48 E T S N A R A V I I F A N E D D I R R V L E A A R R A N Q T  
SEQ. ID. NO. 49 E T S N A R A V I I F A N E D D I R R V L E A A R R A N Q T  
SEQ. ID. NO. 50 E T P N A R A V I M F A N E D D I R R I L E A A K K L N Q S

SEQ. ID. NO. 48 G H F F W M G S D S W G S K I A P V L H L E E V A E G A V T  
SEQ. ID. NO. 49 G H F F W M G S D S W G S K I A P V L H L E E V A E G A V T  
SEQ. ID. NO. 50 G H F L W I G S D S W G S K I A P V Y Q Q E E I A E G A V T

SEQ. ID. NO. 48 I I L P K R M S V R G F D R Y F S S R T L D N N R R N I W F A  
SEQ. ID. NO. 49 I I L P K R M S V R G F D R Y F S S R T L D N N R R N I W F A  
SEQ. ID. NO. 50 I I L P K R A S I D G F D R Y F R S R T L A N N R R N V W F A

SEQ. ID. NO. 48 E F W E D N F H C K L S R H A L K K G S H V K K C T N R E R  
SEQ. ID. NO. 49 E F W E D N F H C K L S R H A L K K G S H V K K C T N R E R  
SEQ. ID. NO. 50 E F W E E N F G C K L G S H G K R N - S H I K K C T G L E R

SEQ. ID. NO. 48 I G Q D S A Y E Q E G K V Q F V I D A V Y A M G H A L H A M  
SEQ. ID. NO. 49 I G Q D S A Y E Q E G K V Q F V I D A V Y A M G H A L H A M  
SEQ. ID. NO. 50 I A R D S S Y E Q E G K V Q F V I D A V Y S M A Y A L H N M

SEQ. ID. NO. 48 H R D L C P G R V G L C P R M D P V D G T Q L L K Y I R N V  
SEQ. ID. NO. 49 H R D L C P G R V G L C P R M D P V D G T Q L L K Y I R N V  
SEQ. ID. NO. 50 H K D L C P G Y I G L C P R M S T I D G K E L L G Y I R A V

SEQ. ID. NO. 48 N F S G I A G N P V T F N E N G D A P G R Y D I Y Q Y Q L R  
SEQ. ID. NO. 49 N F S G I A G N P V T F N E N G D A P G R Y D I Y Q Y Q L R  
SEQ. ID. NO. 50 N F N G S A G T P V T F N E N G D A P G R Y D I F Q Y Q I T

SEQ. ID. NO. 48 N D S A E Y K V I G S W T D H L H L R I E R M H W P G S G Q  
SEQ. ID. NO. 49 N D S A E Y K V I G S W T D H L H L R I E R M H W P G S G Q  
SEQ. ID. NO. 50 N K S T E Y K V I G H W T N Q L H L K V E D M Q W A H R E H

SEQ. ID. NO. 48 Q L P R S I C S L P C Q P G E R K K T V K G M P C C W H C E  
SEQ. ID. NO. 49 Q L P R S I C S L P C Q P G E R K K T V K G M P C C W H C E  
SEQ. ID. NO. 50 T H P A S V C S L P C K P G E R K K T V K G V P C C W H C E

SEQ. ID. NO. 48 P C T G Y Q Y Q V D R Y T C K T C P Y D M R P T E N R T G C  
SEQ. ID. NO. 49 P C T G Y Q Y Q V D R Y T C K T C P Y D M R P T E N R T G C  
SEQ. ID. NO. 50 R C E G Y N Y Q V D E L S C E L C P L D Q R P N M N R T G C

Figure 16b

SEQ. ID. NO. 48 R P I P I I K L E W G S P W A V L P L F L A V V G I A A T L  
SEQ. ID. NO. 49 R P I P I I K L E W G S P W A V L P L F L A V V G I A A T L  
SEQ. ID. NO. 50 Q L I P I I K L E W H S P W A V V P V F V A I L G I I A T T

SEQ. ID. NO. 48 F V V I T F V R Y N D T P I V K A S G R E L S Y V L L A G I  
SEQ. ID. NO. 49 F V V I T F V R Y N D T P I V K A S G R E L S Y V L L A G I  
SEQ. ID. NO. 50 F V I V T F V R Y N D T P I V R A S G R E L S Y V L L T G I

SEQ. ID. NO. 48 F L C Y A T T F L M I A E P D L G T C S L R R I F L G L G M  
SEQ. ID. NO. 49 F L C Y A T T F L M I A E P D L G T C S L R R I F L G L G M  
SEQ. ID. NO. 50 F L C Y S I T F L M I A A P D T I I C S F R R V F L G L G M

SEQ. ID. NO. 48 S I S Y A A L L T K T N R I Y R I F E Q G K R S V S A P R F  
SEQ. ID. NO. 49 S I S Y A A L L T K T N R I Y R I F E Q G K R S V S A P R F  
SEQ. ID. NO. 50 C F S Y A A L L T K T N R I H R I F E Q G K K S V T A P K F

SEQ. ID. NO. 48 I S P A S Q L A I T F S L I S L Q L L G I C V W F V V D P S  
SEQ. ID. NO. 49 I S P A S Q L A I T F S L I S L Q L L G I C V W F V V D P S  
SEQ. ID. NO. 50 I S P A S Q L V I T F S L I S V Q L L G V F V W F V V D P P

SEQ. ID. NO. 48 H S V V D F Q D Q R T L D P R F A R G V L K C D I S D L S L  
SEQ. ID. NO. 49 H S V V D F Q D Q R T L D P R F A R G V L K C D I S D L S L  
SEQ. ID. NO. 50 H I I I D Y G E Q R T L D P E K A R G V L K C D I S D L S L

SEQ. ID. NO. 48 I C L L G Y S M L L M V T C T V Y A I K T R G V P E T F N E  
SEQ. ID. NO. 49 I C L L G Y S M L L M V T C T V Y A I K T R G V P E T F N E  
SEQ. ID. NO. 50 I C S L G Y S I L L M V T C T V Y A I K T R G V P E T F N E

SEQ. ID. NO. 48 A K P I G F T M Y T T C I V W L A F I P I F F G T S Q S A D  
SEQ. ID. NO. 49 A K P I G F T M Y T T C I V W L A F I P I F F G T S Q S A D  
SEQ. ID. NO. 50 A K P I G F T M Y T T C I I I W L A F I P I F F G T A Q S A E

SEQ. ID. NO. 48 K L Y I Q T T T L T V S V S L S A S V S L G M L Y M P K V Y  
SEQ. ID. NO. 49 K L Y I Q T T T L T V S V S L S A S V S L G M L Y M P K V Y  
SEQ. ID. NO. 50 K M Y I Q T T T L T V S M S L S A S V S L G M L Y M P K V Y

SEQ. ID. NO. 48 I I L F H P E Q N V P K R K R S L K A V V T A A T M S N K F  
SEQ. ID. NO. 49 I I L F H P E Q N T I E E V R C S T A A H A F K V A A R A T  
SEQ. ID. NO. 50 I I I F H P E Q N T I E E V R C S T A A H A F K V A A R A T

Figure 16c

SEQ. ID. NO. 48

SEQ. ID. NO. 49 A H A Q L V R E V D V E K V S A F E N P Y V D A I K S L W N  
SEQ. ID. NO. 50 A H A Q L V R E V D V E K V S A F E N P Y V D A I K S L W N

SEQ. ID. NO. 48

SEQ. ID. NO. 49 D P G I Q E C Y D R R R E Y Q L S D S T K Y Y L N D L D R V  
SEQ. ID. NO. 50 D P G I Q E C Y D R R R E Y Q L S D S T K Y Y L N D L D R V

SEQ. ID. NO. 48

SEQ. ID. NO. 49 A D P A Y L P T Q Q D V L R V R V P T T G I I E Y P F D L Q  
SEQ. ID. NO. 50 A D P A Y L P T Q Q D V L R V R V P T T G I I E Y P F D L Q

SEQ. ID. NO. 48

SEQ. ID. NO. 49 S V I F R M V D V G G Q R S E R R K W I H C F E N V T S I M  
SEQ. ID. NO. 50 S V I F R M V D V G G Q R S E R R K W I H C F E N V T S I M

SEQ. ID. NO. 48

SEQ. ID. NO. 49 F L V A L S E Y D Q V L V E S D N E N R M E E S K A L F R T  
SEQ. ID. NO. 50 F L V A L S E Y D Q V L V E S D N E N R M E E S K A L F R T

SEQ. ID. NO. 48

SEQ. ID. NO. 49 I I T Y P W F Q N S S V I L F L N K K D L L E E K I M Y S H  
SEQ. ID. NO. 50 I I T Y P W F Q N S S V I L F L N K K D L L E E K I M Y S H

SEQ. ID. NO. 48

SEQ. ID. NO. 49 L V D Y F P E Y D G P Q R D A Q A A R E F I L K M F V D L N  
SEQ. ID. NO. 50 L V D Y F P E Y D G P Q R D A Q A A R E F I L K M F V D L N

SEQ. ID. NO. 48

SEQ. ID. NO. 49 P D S D K I I Y S H F T C A T D T E N I R F V F A A V K D T  
SEQ. ID. NO. 50 P D S D K I I Y S H F T C A T D T E N I R F V F A A V K D T

SEQ. ID. NO. 48

SEQ. ID. NO. 49 I L Q L N L K D C G L F  
SEQ. ID. NO. 50 I L Q L N L K D C G L F

Figure 16d

SEQ. ID. NO. 48 T Q K G N F R P N G E A K S E L C E N L E A P A L A T K Q T  
SEQ. ID. NO. 49 L R R S N V S R K R S S S L G G S T G S T P S S S I S S K S  
SEQ. ID. NO. 50 L R R S N V S R K R S S S L G G S T G S T P S S S I S S K S

SEQ. ID. NO. 48 Y V T Y T N H A I  
SEQ. ID. NO. 49 N S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q Q Q Q Q P L  
SEQ. ID. NO. 50 N S E D P F P Q P E R Q K Q Q Q P L A L T Q Q E Q Q Q Q Q P L

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 T L P Q Q Q R S Q Q Q P R C K Q K V I F G S G T V T F S L S  
SEQ. ID. NO. 50 T L P Q Q Q R S Q Q Q P R C K Q K V I F G S G T V T F S L S

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 F D E P Q K N A M A H G N S T H Q N S L E A Q K S S D T L T  
SEQ. ID. NO. 50 F D E P Q K N A M A H G N S T H Q N S L E A Q K S S D T L T

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 R H Q P L L P L Q C G E T D L D L T V Q E T G L Q G P V G G  
SEQ. ID. NO. 50 R H Q P L L P L Q C G E T D L D L T V Q E T G L Q G P V G G

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 D Q R P E V E D P E E L S P A L V V S S S Q S F V I S G G G  
SEQ. ID. NO. 50 D Q R P E V E D P E E L S P A L V V S S S Q S F V I S G G G

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 S T V T E N V V N S A A A M T L E S I M A C C L S E E A K E  
SEQ. ID. NO. 50 S T V T E N V V N S A A A M T L E S I M A C C L S E E A K E

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 A R R I N D E I E R Q L R R D K R D A R R E L K L L L G T  
SEQ. ID. NO. 50 A R R I N D E I E R Q L R R D K R D A R R E L K L L L G T

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 G E S G K S T F I K Q M R I I H G S G Y S D E D K R G F T K  
SEQ. ID. NO. 50 G E S G K S T F I K Q M R I I H G S G Y S D E D K R G F T K

SEQ. ID. NO. 48  
SEQ. ID. NO. 49 L V Y Q N I F T A M Q A M I R A M D T L K I P Y K Y E H N K  
SEQ. ID. NO. 50 L V Y Q N I F T A M Q A M I R A M D T L K I P Y K Y E H N K

Figure 16e